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—Editor

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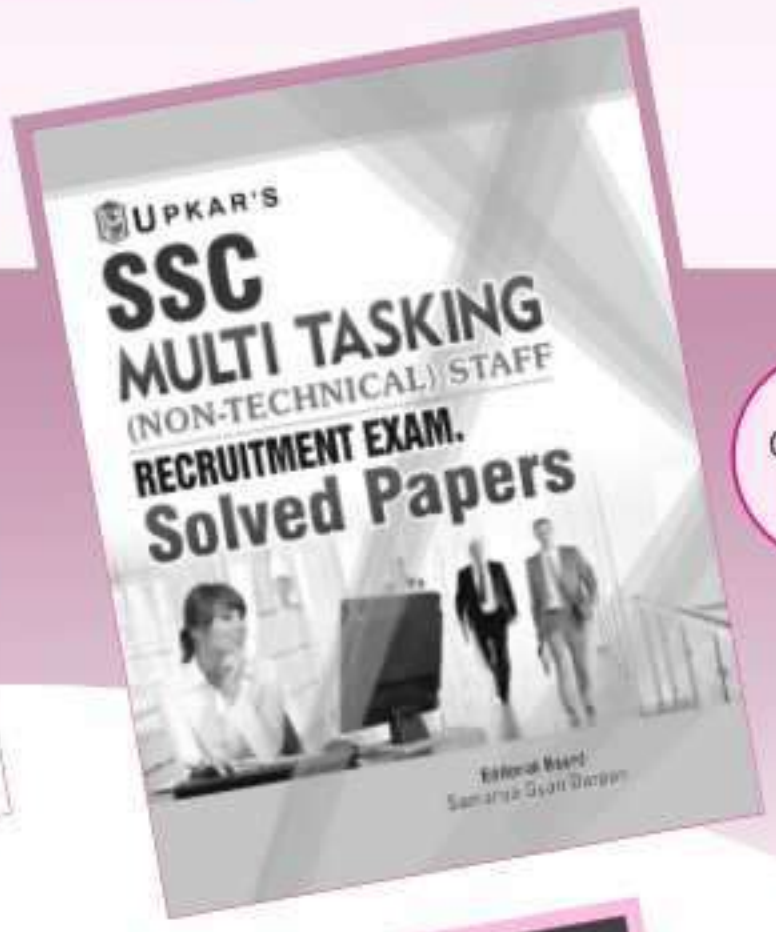

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Editorial

Re-educate Yourself

At a time when problems galore are staring in our face, it is imperative for us, particularly young men and women, to re-educate ourselves about our duties and responsibilities. Problems like terrorism, tyranny on women and children, wide gaps between the haves and havenots, do not lend themselves to easy solutions. They demand reorientation of educational system itself which could tell us the way to tackle such problems effectively. Let us strain every nerve to find solutions for them in order that we may create a social milieu free of tensions generated by seemingly intractable problems. Everyone of us has to so educate himself or herself, and so act that society may be free of ills it is at present beset with.

When we understand the practicality of facing human problems of various kinds, we generally view these as issues in the perspective of political, economic, social development and educational aspects as well as an individual.

However, when these turn out to be complex and beyond resolution at the local level, science and technology are resorted to at the collective level as channels for remedial action.

The disaster engineered by terrorists in the United States on Sept. 11, 2001, could be responded to in one of the two ways, either as a national humiliation and calamity demanding powerful retaliatory action or as action, or a clarion call for a unified world-wide pledge to abolish not only terrorism, but all other barbaric forms of violence such as the use of torture which is now practised on a large scale everywhere, the penalisation of women and children and ruthless exploitation of animal lives and products. The authorities in America thought it better and proper to put an end to the rule of the Talibans, who were responsible for the disaster referred to above. To a great extent, the U.S.A. Government achieved success. But all would agree that the menace has not ended. The danger of terrorists still hangs over the U.S.A. Most of the countries have pledged themselves to fight against terrorism spreading almost in every country, some on the offensive and some on the defensive.

Almost the same conditions are prevailing in India. Terrorists, trained at the training camps in Pakistan are doing mischief in India day and night and making disastrous assaults on Kashmir. By sending armed persons and vehicles loaded with arms to the Parliament building, they had given a hint of their intentions and future plans. The Indian Government was also ready to take retaliatory action. It had started to exterminate terrorism in Kashmir and talking of war against Pakistan if she did not come round to put an end to its support to the terrorist activities.

The terrorist attack on Mumbai on November 26, 2008 was a most adeptly planned operation which devoured about two hundred persons at the Taj Hotel and elsewhere. The attack jolted the government and people of India and filled them with a new resolve to put an end to this menace.

The unfortunate aspect of this situation is that the U.S.A. President paid no heed to the basic causes of terrorism; so is the case with the Government of India. Has any of them taken a serious pledge to abolish those conditions which create terrorism and force our youngmen to take to the path of terrorism, which is bound to take to the rule of the jungle. So far as the Indian government is preparing to face outside terrorism, we have to say nothing. But what about the internal terrorism. In the Indian Society, trade in women and children is rampant, number of rapes and murders are being committed by hundreds. Young women run the risk of being abducted every moment. There is hardly a day when some important persons are not held up for ransom etc. Life of both the common man and the V.I.P. is in constant danger. In short, Indian society is fast turning into a resort for barbaric and uncivilised activities.

It is high time that the drift towards terrorism had to be arrested here and now, so that it may not take the form of national menace and also acquire dimensions beyond our control. So we have to take to the other alternative suggested elsewhere, *i.e.*, we have to come out with the pledge to abolish all sorts of barbaric activities and violence, specially profiteering being practised on a large scale in the various forms.

But then, how can our youngmen and women be instrumental in this crusade of meeting with these problems. In this respect, they would do well to remember that the weak have rights and the strong have obligations. They know that it is mostly the have-nots who are obliged to take to unsocial acts. In case they are accorded their due share of life, liberty and the right of happiness, they would definitely not like to take to the ways of the jungle. It is a fact that the rights of the weaker sections are well safeguarded by the Constitution or the government. But rules do not work themselves. Cultural influences are required to safeguard the rights of the weak. You can help in this respect and thereby wash off the charge against the educated ones that they are callous and unmindful of their duties and obligations. You can easily guide those who are lost in the wilderness of ignorance, children are killed in the womb, and doctors are a party to it.

This is a kind of re-education which educates the educated ones to recognize their obligations. Our young readers will not remain behind in re-educating themselves to make the Indian Society a better place to live in. This will also go a long way in ensuring the bright future of democracy in India.

●●●

Relation or Analogy

Analogy means First **Similarity or Correspondence.** In this type of first two objects related in someway are given and third object is also given with four or five alternatives. The candidates are required to find out which one of the alternatives bears the same relationship with the third object as first and second objects are related. This test is therefore meant to test a candidate's overall knowledge, power of reasoning and ability to think concisely and accurately.

Example 1. Curd : Milk : : Shoe : ?

(A) Leather (B) Cloth
(C) Jute (D) Sliver

Answer with Explanation : (A) As Curd is made from Milk similarly Shoe is made from Leather.

Example 2. Moon : Satellite : : Earth : ?

(A) Sun (B) Planet
(C) Solar System (D) Asteroid

Answer with Explanation : (B) As Moon is a Satellite similarly Earth is a Planet.

Example 3. Friend is related Friendly in the same way as Opponent is related to ..... ?

(A) Defeat (B) Enemy
(C) Hostile (D) Contest

Answer with Explanation : (C) Friend and Opponent are antonyms to each other, in the same way Friendly and Hostile are also antonyms to each other.

Example 4. ABC : ZYX : : CBA : ?

(A) XYZ (B) BCA
(C) YZX (D) ZXY

Answer with Explanation : (A) CBA is the reverse of ABC similarly XYZ is the reverse of ZYX.

Example 5. Doctor : Nurse : : ? : Follower

(A) Employer (B) Leader
(C) Worker (D) Union

Answer with Explanation : (B) Just as a Nurse follows the Doctor's instructions, so also a Follower works as directed by the Leader.

Example 6. Oxygen : Burn : : Carbon dioxide : ?

(A) Isolate (B) Foam
(C) Extinguish (D) Explode

Answer with Explanation : (C) Oxygen helps in Burning while Carbon dioxide extinguishes Fire.

Example 7. If PRLN : XZTV : : JLFH : ?, then which of the five alternatives will replace (?) ?

(A) NPRT (B) NRPT
(C) NTRP (D) RTNP
(E) RPNT

Answer with Explanation : (D)

$P \xrightarrow{+8} X$ Similarly $J \xrightarrow{+8} R$
$R \xrightarrow{+8} Z$ $L \xrightarrow{+8} T$
$L \xrightarrow{+8} T$ $F \xrightarrow{+8} N$
$N \xrightarrow{+8} V$ $H \xrightarrow{+8} P$

Example 8. As Mouse is related to Cat in the same way Fly is related ?

(A) Animal (B) Horse
(C) Spider (D) Rat

Answer with Explanation : (C) Cat feeds on the Mouse in the same way Spider feeds on Fly.

Example 9. Which number will take place on (?) place ?

5 : 65 : : 7 : ?

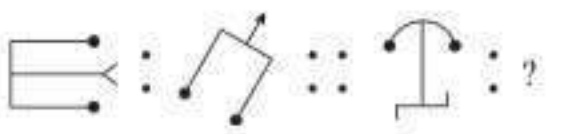
(A) 134 (B) 158
(C) 174 (D) 184
(E) 175

Answer with Explanation : (E)

$$\text{As } (5)^3 = 125 + 5 = \frac{130}{2} = 65$$

$$\text{In the same way } (7)^3 = 343 + 7 = \frac{350}{2} = 175$$

Example 10.



(A)
(B)
(C)
(D)
(E)

Answer with Explanation : (B) Figure rotates 45° anticlockwise lower portion of the figure is reversed and shaded circles are changed into blank circle. The head of the arrow is also reversed. Hence, answer (B) will replace the sign of ?.

Exercise 1

Directions— (Q. 1–18) Select the correct alternative for the following questions—

1. 'Forest' is related to 'Vivarium' in the same way as 'Sea' is related to—
   (A) Port site (B) Water
   (C) Fishery (D) Aquarium
2. 'Metal' is related to 'Conduction' in the same way as 'Plastic' is related to—
   (A) Ground oil Chemistry

(B) Industry
(C) Inflammability
(D) Insulation

3. Wax is related to Grease in the same way as Milk is related to—
(A) Drink (B) Ghee
(C) Protein (D) Curd

4. Walk is related to Run in the same way as 'Breeze' is related to—
(A) Cold (B) Dust
(C) Wind (D) Air

5. 'Jade' is related to 'Green' in the same way as 'Garnet' is related to—
(A) Red (B) Blue
(C) Orange (D) Yellow

6. 'Smoke' is related to 'Pollution' in the same way as 'War' is related to—
(A) Victory (B) Treaty
(C) Defeat (D) Destruction

7. Indolence is related to Work in the same way as Taciturn is related to—
(A) Cheat (B) Act
(C) Speak (D) Observe

8. Cat is related Kitten in the same way as Woman is related to—
(A) Puppy (B) Colt
(C) Calf (D) Baby

9. Much is related to Many in the same way as Measure is related to—
(A) Count (B) Measures
(C) Calculate (D) Weigh

10. 'Ophthalmia' is related to 'Eye' in the same way as 'Rickets' is related to—
(A) Kidney (B) Nose
(C) Bone (D) Heart

11. 'Kathak' is related to 'U.P.' in the same way as 'Oddisy' is related to—
(A) Assam (B) Kerala
(C) Orissa (D) Gujarat

12. 'Horse' is related to 'Hoof' in the same way as 'Eagle' is related—
(A) Clutch (B) Leg
(C) Foot (D) Claw

13. As 'Reading' is related to 'Knowledge' in the same way as 'Work' is related to—
(A) Money (B) Employment
(C) Experience (D) Engagement

14. As 'Dogs' is related to 'Bark' in the same way as 'Goats' is related to—
(A) Bleat (B) Crow
(C) Grunt (D) Howl

15. As 'Rabbit' is related to 'Burrow' in the same way as 'Lunatic' is related to—
(A) Prison (B) Cell
(C) Barrack (D) Asylum

16. As 'Flower' is related to 'Bud' in the same way as 'Fruit' is related to—
(A) Seed (B) Tree
(C) Flower (D) Stem
(E) Petal

17. As 'Table' is related to 'Wood' in the same way as 'Shirt' is related to—
(A) Cotton (B) Cloth
(C) Dress (D) Uniform
(E) Thread

18. As 'College' is related to 'Teachers' in the same way as 'Hospital' is related to—
(A) Doctors (B) Patients
(C) Medicine (D) Beds
(E) Nurses

Directions—(Q. 19–31) In each of the following question, select the alternative that will come in place of question-mark (?).

19. College : Student : : Hospital : ?
(A) Nurse (B) Doctor
(C) Treatment (D) Patient

20. Peacock : India : : Bear : ?
(A) Australia (B) America
(C) Russia (D) England

21. Paw : Cat : : Hoof : ?
(A) Lamb (B) Elephant
(C) Lion (D) Horse

22. Ornithologist : Bird : : Archaeologist : ?
(A) Islands (B) Mediators
(C) Archaeology (D) Aquatic

23. Shade : Tree : : Warmth : ?
(A) Self-respect (B) Mother
(C) Wealth (D) Ease

24. Tiger : Forest : : Otter : ?
(A) Cage (B) Sky
(C) Nest (D) Water

25. Flow : River : : Stagnant : ?
(A) Rain (B) Stream
(C) Pool (D) Canal

26. Carbon : Diamond : : Corundum : ?
(A) Garnet (B) Ruby
(C) Pukhraj (D) Pearl

27. Cassock : Priest : : ? : Graduate
(A) Cap (B) Tie
(C) Coat (D) Gown

28. Conference : Chairman : : Newspaper : ?
(A) Reporter (B) Distributor
(C) Printer (D) Editor

29. South : North-West : : West : ?
(A) North (B) South-West
(C) North-East (D) East

30. Parts : Strap : : Wolf : ?
(A) Fox (B) Animal
(C) Wood (D) Flow

31. Bat : Cat : : ? : Fat
(A) Mat (B) Pat
(C) Eat (D) Hat

Exercise 2

1. 'Seed' is related to 'Fruit' in the same way as 'Fruit' is related to—
(A) Tree (B) Branch
(C) Flower (D) Petal
(E) None of these

2. 'Iron' is related to 'Metal' in the same way as 'Brass' is related to—
(A) Iron (B) Alloy
(C) Copper (D) Zinc
(E) None of these

3. 'Visual' is related to 'Light' in the same way as 'Audio' is related to—
(A) Voice (B) Sound
(C) Drama (D) Noise
(E) None of these

4. 'Guava' is related to 'Fruit' in the same way as 'Carrot' is related to—
(A) Stem (B) Fruit
(C) Flower (D) Root
(E) None of these

5. 'Radish' is related to 'Root' in the same way as 'Brinjal' is related to—
(A) Fruit (B) Stem
(C) Flower (D) Root
(E) None of these

6. 'Mother' is related to 'Child' in the same way as 'Tree' is related to—
(A) Sapling (B) Bush
(C) Grass (D) Shrub
(E) None of these

7. 'Seed' is related to 'Fruit' in the same way as 'Fruit' is related to—
(A) Root (B) Forest
(C) Stem (D) Flower
(E) None of these

8. 'Go' is related to 'Come' in the same way as 'High' is related to—
(A) Above (B) Low
(C) Jump (D) Stand
(E) None of these

9. 'Petal' is related to 'Flower' in the same way as 'Player' is related to—
(A) Games (B) Sports
(C) Team (D) Competition
(E) None of these

10. 'Jackal' is related to 'Carnivorous' in the same way as 'Goat' is related to—
(A) Omnivorous (B) Carnivorous
(C) Herbivorous (D) Multivorous
(E) None of these

11. As 'If' is related to 'Condition' in the same way 'But' is related to which of the following ?
(A) Appendix (B) To Dery
(C) Opposition (D) Durability
(E) Approval

12. As 'Man' is related to the 'House' in the same 'Cow' is related to—
(A) Den (B) Shed
(C) Cave (D) House
(E) Stable

13. As 'Class' is related to 'Blackboard' in the same way 'Cinema Hall' is related to which ?
(A) Light (B) Film
(C) Projector (D) Balcony
(E) Screen

14. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Tomato (B) Brinjal
(C) Radish (D) Pumpkin
(E) Gourd

Directions—(Q. 15–29) In each of the following questions, four alternatives are given. Choose the correct answer.

15. As 'House' is related to 'Shelter' in the same way, 'Soap' is related to which ?
(A) Washerman (B) Bathroom
(C) Water (D) Perfume
(E) Cleanliness

16. As 'Crime' is related to 'Court', in the same way, 'Sickness' is related to which ?
(A) Lawyer (B) Punishment
(C) Hospital (D) Doctor
(E) Medicine

17. As 'Millionaire' is related to 'Wealth', in the same way, 'Intelligent' is related to which ?
(A) Capacity (B) Smartness
(C) Wisdom (D) Attentive
(E) Alertness

18. As 'House' is related to 'Mason' in the same way, 'Chair' is related to which ?
(A) Wood (B) Furniture
(C) Table (D) Seat
(E) Carpenter

19. As 'Television' is related to 'News', in the same way, 'Telephone' is related to which ?
(A) Message (B) Serial number
(C) Apparatus (D) Dialing
(E) Wire

20. As 'Fan' is related to 'Feather', in the same way, 'Wheel' is related to which ?
(A) Round (B) Car
(C) Spokes (D) Rotation
(E) Air

21. As 'Shirt' is related to 'Cloth', in the same way, 'Shoe' is related to which ?
(A) Cobbler (B) Tailor
(C) Leather (D) Hammer
(E) Wax

22. As 'Tailor' is related to 'Cloth', in the same way, 'Cobbler' is related to which ?
(A) Machine (B) Leather
(C) Sewing (D) Repairing
(E) Make

23. As 'Pen' is related to 'Stationery', in the same way, 'Chair' is related to which ?
(A) Wood (B) Comfort
(C) Room (D) Seat
(E) Furniture

24. As 'Cricket' is related to 'Bat', in the same way, 'Hockey' is related to which ?
(A) Ball (B) Field
(C) Player (D) Stick
(E) None of these

25. As 'Bird' is related to 'Wing', in the same way, 'Fish' is related to which ?
(A) Water (B) Gills
(C) Fins (D) Tail
(E) Scale

26. As 'Hill' is related to 'Mountain', in the same way, 'Shrub' is related to which ?
(A) Plant (B) Land
(C) Forest (D) Tree
(E) Sapling

27. As 'Wood' is related to 'Tree', in the same way, 'Wool' is related to which ?
(A) Cloth (B) Sheep
(C) Fibre (D) Cotton
(E) Blanket

28. As 'Guru Dwara' is related to 'Sikh', in the same way, 'Fire Temple' is related to which ?
(A) Hindu (B) Islam
(C) Christian (D) Jain
(E) None of these

29. As 'Ravi Shankar' is related to 'Sitar' in the same way, 'Udayi Shankar' is related to which ?
(A) Tabla (B) Dance
(C) Sarod (D) Sitar
(E) Flute

30. As 'Innings' is related to 'Badminton', in the same way, 'Halfnelson' is related to which ?
(A) Wrestling (B) Boxing
(C) Weight-lifting (D) Bridge
(E) Golf

31. As 'Pen' is related to 'Writer', in the same way, 'Stick' is related to which ?
(A) Wood (B) Player
(C) Hockey player (D) Game
(E) None of these

32. As 'Face' is related to 'Expression' in the same way, 'Hand' is related to which ?
(A) Doing work (B) Shaking hands
(C) Coquetry (D) To coquet
(E) Waves

33. As 'Sea' is related to 'Ship' in the same way as 'Road' is related to—
(A) Traffic (B) Travellers
(C) Journey (D) Bus
(E) Public

34. As 'Dress' is related to 'Body' in the same way as 'Bangles' are related to—
(A) Glass (B) Lady
(C) Wrist (D) Beauty
(E) Wearing

35. As 'Mountain' is related to 'Hill' in the same way as 'River' is related to—
(A) Wath (B) Swimming
(C) Flowing (D) Tank
(E) Irrigation

36. As 'Calf' is related to 'Cow' in the same way as 'Kitten' is related to—
(A) Deer (B) Bear
(C) Cat (D) Duck
(E) Horse

37. As Jackal is related to 'Howl' in the same way as Cow is related to—
(A) Caas (B) Hoot
(C) Coo (D) Bbat
(E) Moo

38. As Nun is related to 'Convent' in the same way as 'Hen' is related to—
(A) Nest (B) Shed
(C) Cell (D) Cote
(E) Burrow

39. 'The Story of My Experiments with Truth' is related to M. K. Gandhi in the same way as 'Glimpses of World History' is related to—
(A) Naryan N. K. (B) Naidu Sarojini
(C) J. L. Nehru (D) P. C. Munshi
(E) Bunyan John

Exercise 3

Directions— In each of the following questions consists of pair of words bearing a relationship among these, from amongst the alternatives, pick up the pair that best illustrate a similar relationship.

1. Letter : Word :
   (A) Page : Book (B) Product : Factory
   (C) Club : People (D) Home Work : School
2. Sunrise : Sunset :
   (A) Dawn : Twilight (B) Noon : Midnight
   (C) Morning : Night (D) Energetic : Lazy
3. Stove : Kitchen
   (A) Window : Bedroom
   (B) Sink : Bathroom
   (C) Pot : Pan
   (D) Television : Living room
4. Lawyer : Court
   (A) Chemist : Laboratory
   (B) Businessman : Office
   (C) Labour : Road
   (D) Athlete : Olympics
5. Silence : Noise
   (A) Quiet : Peace (B) Baldness : Hair
   (C) Talk : Whisper (D) Sing : Dance
6. Candle : Wick
   (A) Hammer : Nail (B) Light : Bulb
   (C) Oven : Fire (D) Bicycle : Wheel
7. River : Ocean
   (A) Child : School (B) Book : Library
   (C) Lane : Road (D) Cloth : Body
8. Arc : Circle
   (A) Number : Count (B) Fraction : Percentage
   (C) Pie : Slice (D) Segment : Line
9. Kick : Football :
   (A) Wash : Dishes (B) Dust : Rage
   (C) Mop : Sweep (D) Throw : Ring
10. Glove : Hand
   (A) Neck : Collar (B) Tie : Shirt
   (C) Socks : Feet (D) Coat : Pocket
11. Sound : Muffled
   (A) Moisture : Humid
   (B) Colour : Faded
   (C) Despair : Anger
   (D) Odour : Pungent
12. Thermometer : Temperature
   (A) Millimeter : Scale
   (B) Length : Breadth
   (C) Solar Energy : Sun
   (D) Cardiograph : Heart-rate
13. Scales : Fish
   (A) Bear : Fur (B) Woman : Dress
   (C) Skin : Man (D) Tree : leaves
14. Train : Track
   (A) Water : Boat (B) Bullet : Barrel
   (C) Idea : Brain (D) Fame : Television
15. Chalk : Black-board
   (A) Type : Point (B) Table : Chair
   (C) Door : Handle (D) Ink : Paper
16. Numismatist : Coins
   (A) Jeweller : Jewels
   (B) Cartographer : Maps
   (C) Philatelist : Stamps
   (D) Geneticist : Chromosomes
17. Platform : Train
   (A) Aeroplane : Aerodrome
   (B) Hotel : Tourist
   (C) Quay : Ship
   (D) Footpath : Traveller
18. Lively : Dull
   (A) Employed : Jobless
   (B) Flower : Bud
   (C) Emotional : Sensitive
   (D) Happy : Gay
19. Boarder : Country
   (A) Pen : Cap (B) Book : Cover
   (C) Handle : Shade (D) Frame : Picture
20. Rectangle : Pentagon
   (A) Side : Angle
   (B) Diagonal : Perimeter
   (C) Triangle : Rectangle
   (D) Circle : Square

Directions—(Q. 21–42) In each of the following questions, select the alternatives that will come in place of question-mark (?).

21. ACFJ : ZXUQ : : EGIN : ?
   (A) VUSQ (B) UTRP
   (C) VRPM (D) VTRM
22. BCFG : HILM : : NORQ : ?
   (A) TXWU (B) TXUW
   (C) TUXW (D) TVWX
23. AZBY : CXDW : : EVFU : ?
   (A) GTHS (B) GHTS
   (C) GSTH (D) TGSH
24. Computer : fqprxvht : : Language : ?
   (A) oxpixdig (B) ocqicyig
   (C) ocqixcjg (D) ocqixcig
25. Corden : zrogbq : : ? : Pxivro
   (A) mulmul (B) sulsul
   (C) munmun (D) srspql
26. BLOCKED : YOLXPVW : : ? : OZFMXS.
   (A) DEBATE (B) RESULT
   (C) LABOR (D) LAUNCH
27. ? : QEHMDF : : WIDELY : HVCDXK
   (A) FRINGE (B) STRING
   (C) FRANCE (D) DEMAND

28. BEGK : ADFJ : : PSVY : ?
(A) ROUX (B) ORUX
(C) LQUT (D) LOQT

29. ABCD : WXYZ : : EFGH : ?
(A) STUV (B) ZYXW
(C) VUTS (D) WXZY

30. ACEG : IKMO : : QSUW : ?
(A) YZCE (B) YACD
(C) YACE (D) YBCE

31. REASON : SFBTPO : : THINK : ?
(A) SGHMJ (B) UIJOL
(C) UHNKI (D) UJKPM

32. FIELD : GJFME : : SICKLE : ?
(A) RHBJKD (B) RHJBKD
(C) TJLDMF (D) TJDLMF

33. PASS : QBTT : : FAIL : ?
(A) GJBM (B) GBJM
(C) MBJG (D) MJBG

34. CEDH : HDEC : : ? : PNRV
(A) VRNP (B) RNPV
(C) NRVP (D) VNRP

35. LKJ : pon : : ? : hgf
(A) dcle (B) DBC
(C) dcd (D) DCB

36. DFHJ : LNPR : : TVXZ : ?
(A) DBFH (B) DBHF
(C) BDFH (D) FDBH
(E) HFDB

37. ACEG : ? : : BDFH : KMOQ
(A) NLPR (B) LMNO
(C) JLNP (D) JNLO
(E) JLDN

38. AEFJ : KOPT : : ? : QUVZ
(A) GKLP (B) GLKP
(C) HKLP (D) HKQL
(E) KLQM

39. PSQR : CFED : : JMKL : ?
(A) UVXZ (B) YVZX
(C) YXZW (D) WZYX
(E) YZWX

40. QIOK : MMKO : : YAWC : ?
(A) UESG (B) USGA
(C) VUES (D) SUEG
(E) None of these

41. KeaC : Cack : : XgmF : ?
(A) GmcF (B) FmgX
(C) EgmX (D) EmgF
(E) None of these

42. ZRYQ : KBJA : : PWOV : ?
(A) GBHA (B) ISJT
(C) ELDK (D) EOFP
(E) UNWM

Exercise 4

Directions—Each of the following questions has a group. Which one of the given alternatives will be another member of the group or of that class ?

1. Lucknow, Patna, Bhopal, Jaipur
(A) Shimla (B) Mysore
(C) Pune (D) Indore

2. Pathology, Cardiology, Radiology, Opthalmology
(A) Biology (B) Haematology
(C) Zoology (D) Geology

3. Apple, Grape, Orange
(A) Vegetable (B) Fruits
(C) Stems (D) Oats

4. Mars, Earth, Jupiter
(A) Planets (B) Cosmos
(C) Orbits (D) Astronauts

5. Volleyball, Hockey, Football
(A) Aquatics (B) Baseball
(C) Athelets (D) Sports

6. Newspaper Hoarding, Television
(A) Press (B) Media
(C) Rumour (D) Broadcast

7. Tamilian, Gujarati, Punjabi
(A) Aryan (B) Dravidian
(C) Indian (D) Barbarian

8. Clutch, Brake, Horn
(A) Car (B) Scooter
(C) Accident (D) Steering

9. Basic, Pascal, Fortran
(A) Cobol (B) Bhopal
(C) Calculator (D) Cyclotron

10. Wrestling, Karate, Boxing
(A) Polevault (B) Swimming
(C) Judo (D) Polo

11. Root, Stem, Branch
(A) Fertilizer (B) Leaf
(C) Tree (D) Wood

12. Engine, Compartment, Wheels
(A) Motor (B) Ship
(C) Sea (D) Rail-line

13. Wheat, Barley, Rice
(A) Food (B) Agriculture
(C) Farm (D) Gram

14. Arid, Parched, Droughty
(A) Draft (B) Earth
(C) Dry (D) Cow

15. Lock, Shut, Fasten
(A) Window (B) Door
(C) Iron (D) Block

16. Lungs, Liver, Kidney
(A) Neck (B) Testis
(C) Heart (D) Intestines

17. Carpenter, Plumber, Electrician
(A) Doctor (B) Blacksmith
(C) Professor (D) Lawyer

Directions—(Q. 18–22) In each of the following questions, three words are given. They are followed by four words, one of which stands for the class to which these words belong. Find that word.

18. Honesty, Credibility, Realiability
(A) Quality (B) Character
(C) Nicety (D) Dependability

19. Coal, Iron, Mica
(A) Rock (B) Minerals
(C) Gold (D) Earth

20. Aeroplane, Train, Truck
(A) Transport (B) Speed
(C) Wheels (D) Rooms

21. Fraud, Jealously, Hatred
(A) Destruction
(B) Envy
(C) Quality
(D) Human Characteristics

22. Calf, Kid, Pup
(A) Infant (B) Young
(C) Larva (D) Animal

Directions—(Q. 23–25) In each of the following questions, three words are given, choose one out of the four given alternatives, which mentions the same characteristic.

23. Kerosene, Petrol, Diesel
(A) Firewood (B) Fuel
(C) Engine (D) Coal

24. Fly, Bee, Ant
(A) Cockroach (B) Spider
(C) Termite (D) Insect

25. Cap, Turban, Hat
(A) Umbrella (B) Hair
(C) Headgear (D) Safety

Exercise 5

Directions—In each of the following questions which alternative will replace the question-mark (?) .

1. 25 : 37 : : 49 : ?
(A) 41 (B) 65
(C) 56 (D) 60

2. 24 : 60 : : 120 : ?
(A) 160 (B) 220
(C) 300 (D) 108

3. MO : 13 11 : : H J : ?
(A) 19 17 (B) 18 16
(C) 8 10 (D) 16 18

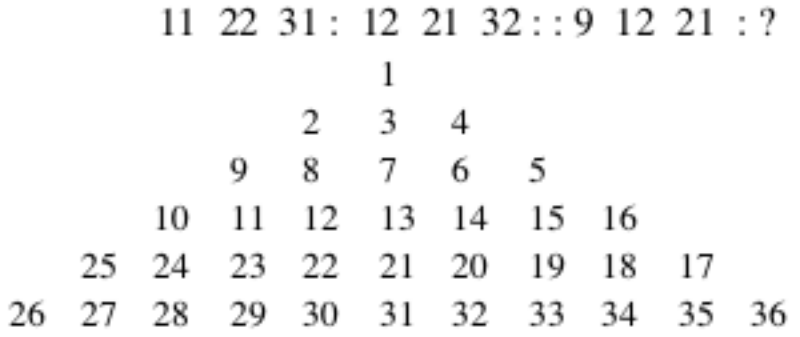
4. K/T : 11/20 : : J/R : ?
(A) 10/18 (B) 11/19
(C) 10/8 (D) 9/10

5. 8 : 24 : : ? : 32
(A) 5 (B) 6
(C) 10 (D) 8

6. 16 : 56 : : 32 : ?
(A) 96 (B) 112
(C) 120 (D) 128

7. MXN : 13 × 14 : : FXR : ?
(A) 14 × 15 (B) 5 × 17
(C) 6 × 18 (D) 7 × 19

8. In this pyramid number if :
11 22 31 : 12 21 32 : : 9 12 21 : ?



(A) 2 7 14 (B) 8 13 20
(C) 6 15 18 (D) 10 23 30

9. 4 : 19 : : 7 : ?
(A) 52 (B) 49
(C) 28 (D) 68

10. 123 : 13^2 : : 235 : ?
(A) 23^2 (B) 35^2
(C) 25^3 (D) 25^2

11. 27 : 125 : : 64 : ?
(A) 162 (B) 216
(C) 517 (D) 273

12. 10 : 99 : 9 : ?
(A) 69 (B) 80
(C) 97 (D) 49

13. 68 : 130 : : ? : 350
(A) 220 (B) 224
(C) 222 (D) 226

14. 61 : 121 : : ? : 337
(A) 211 (B) 222
(C) 220 (D) 240

15. 8 : 28 : : 27 : ?
(A) 28 (B) 8
(C) 64 (D) 65

16. 3 : 12 : : 5 : ?
(A) 25 (B) 35
(C) 30 (D) 15

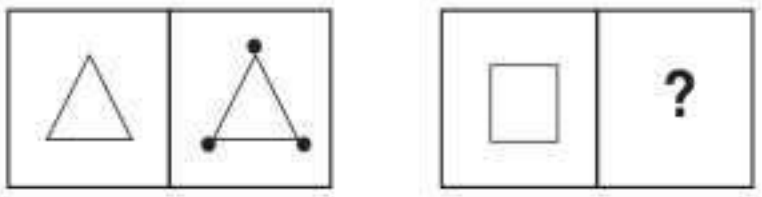
17. 144 : 10 : : 169 : ?
(A) 14 (B) 11
(C) 13 (D) 12

Exercise 6

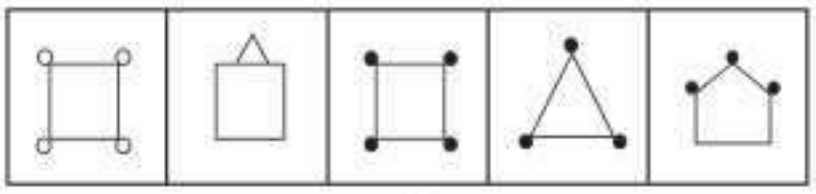
Directions—(Q. 1–10) The second figure in the first unit of the problem figures bears a certain relationship to

the first figure. Similarly, one of the figures in the answer figures bears the **same relationship** to the first figure in the second unit of the problem figures. You are therefore to locate the figure which would fit in the question-mark (?).

1. **Problem Figures**

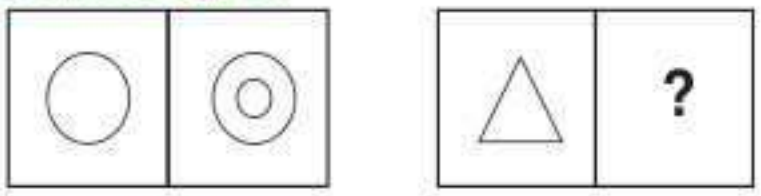


Answer Figures

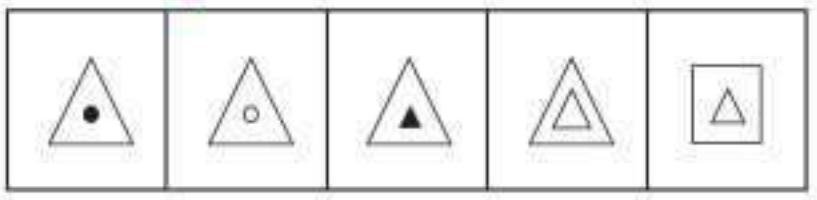


(A) (B) (C) (D) (E)

2. **Problem Figures**

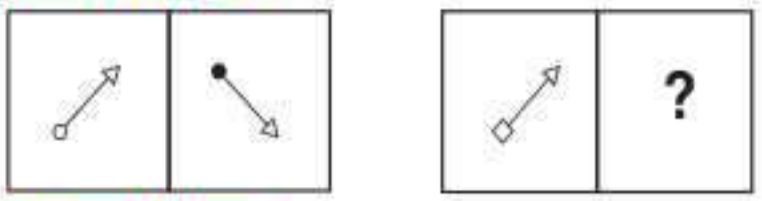


Answer Figures

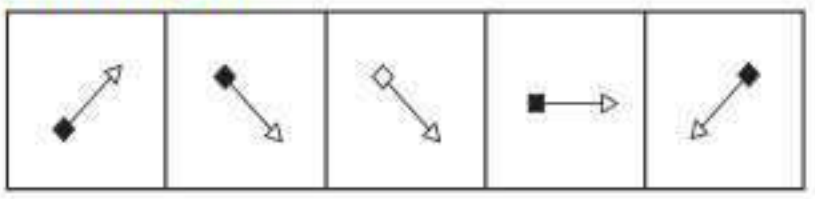


(A) (B) (C) (D) (E)

3. **Problem Figures**

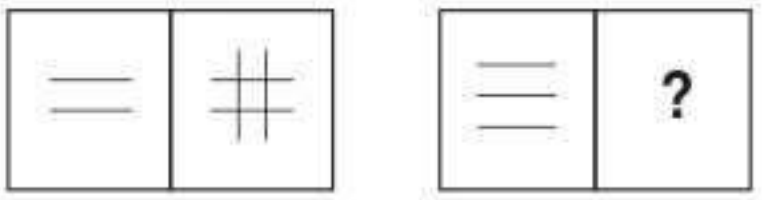


Answer Figures

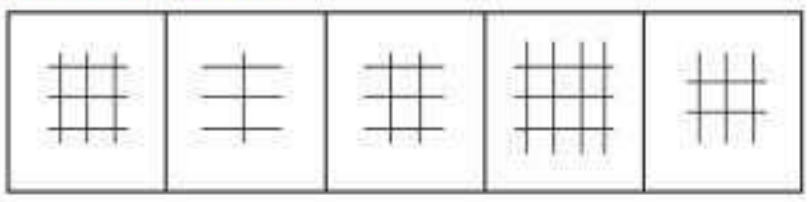


(A) (B) (C) (D) (E)

4. **Problem Figures**

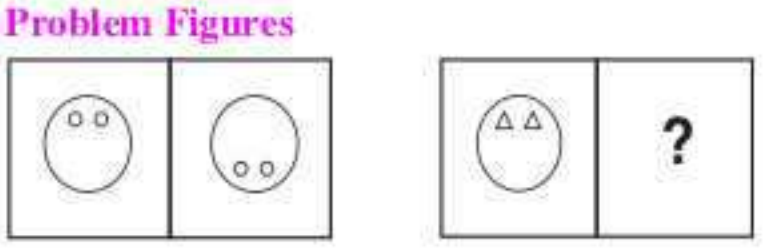


Answer Figures

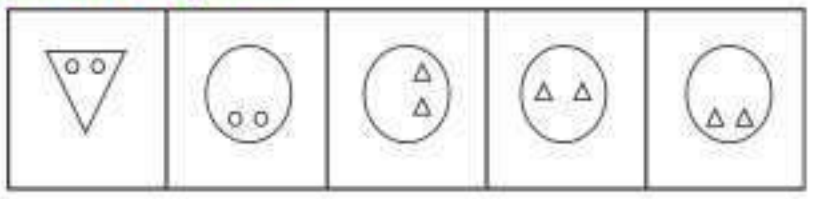


(A) (B) (C) (D) (E)

5. **Problem Figures**

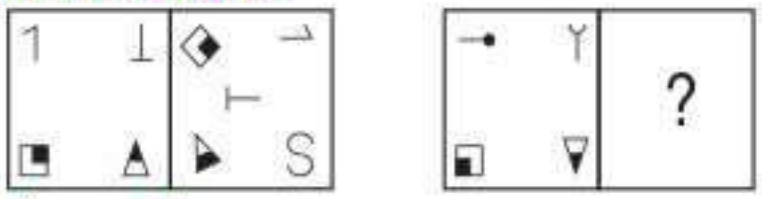


Answer Figures

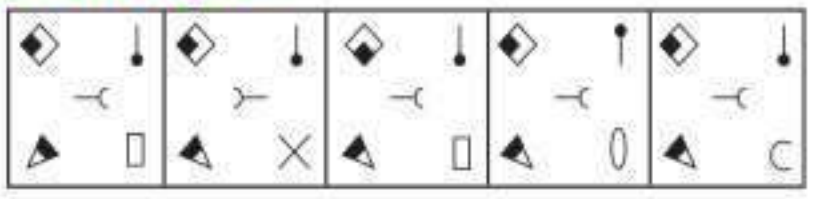


(A) (B) (C) (D) (E)

6. **Problem Figures**

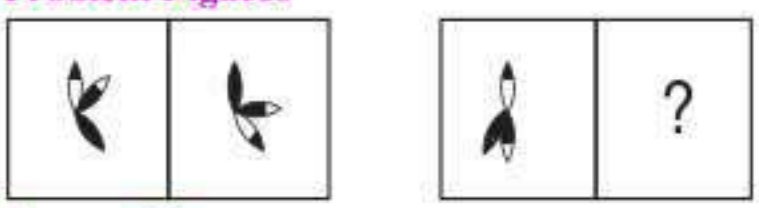


Answer Figures



(A) (B) (C) (D) (E)

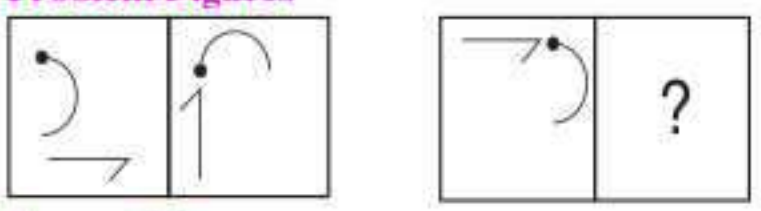
7. **Problem Figures**



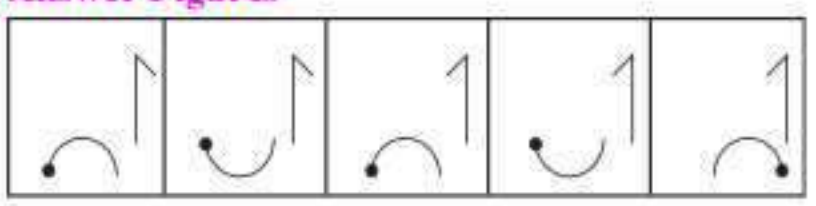
Answer Figures

(A) (B) (C) (D) (E)

8. **Problem Figures**

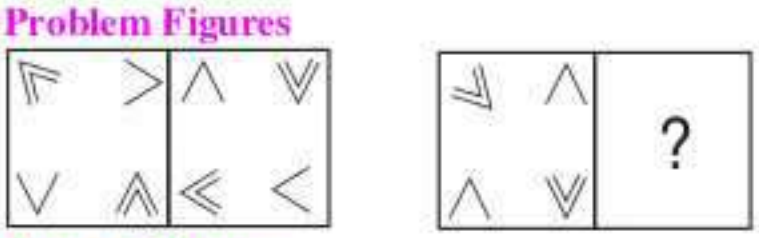


Answer Figures

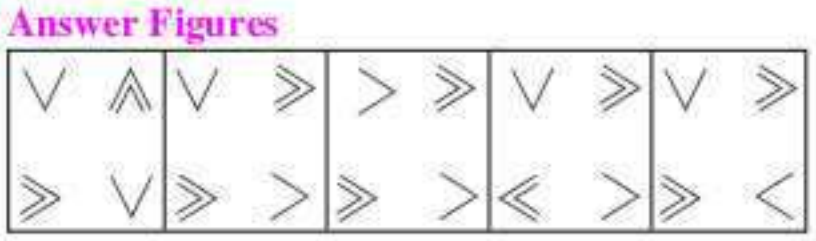


(A) (B) (C) (D) (E)

9. **Problem Figures**

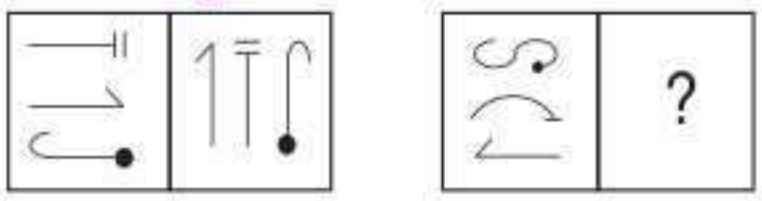


Answer Figures

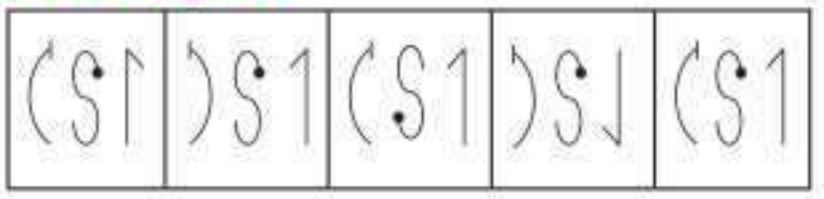


(A) (B) (C) (D) (E)

10. **Problem Figures**



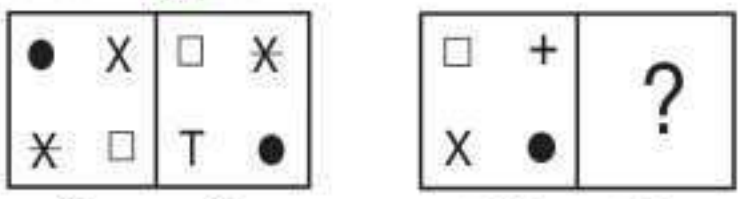
Answer Figures



(A) (B) (C) (D) (E)

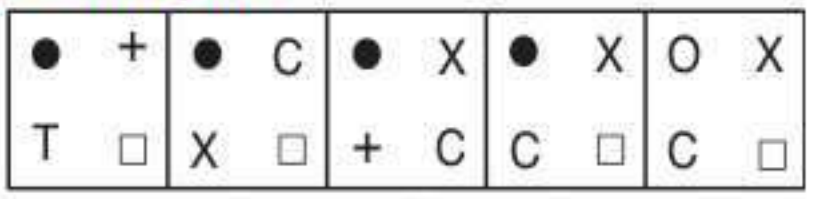
Directions—(Q. 11–60) The second figure in the first unit of the problem figures bears a certain relationship to the first figure. Similarly, one of the figures in the answer figures bears the same relationship to the first figure in the second unit of the problem figures. You are, therefore to locate the figure which would fit in the question-mark (?).

11. **Problem Figures**



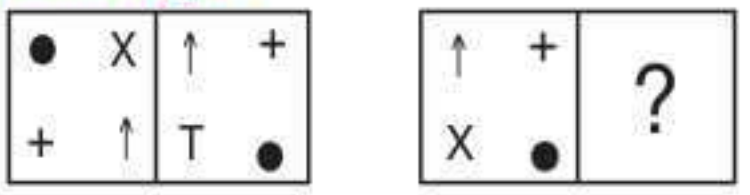
(i) (ii) (iii) (iv)

Answer Figures



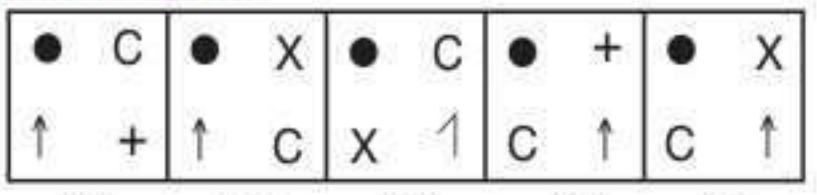
(A) (B) (C) (D) (E)

12. **Problem Figures**



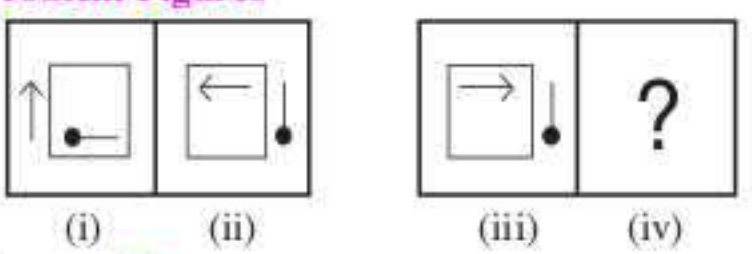
(i) (ii) (iii) (iv)

Answer Figures



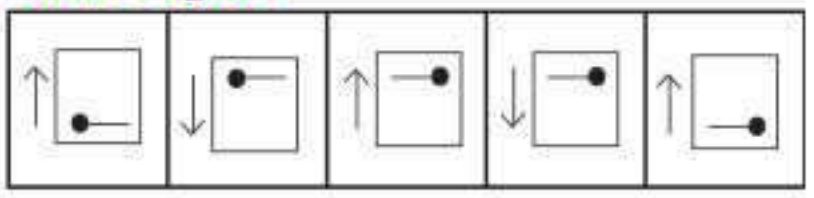
(A) (B) (C) (D) (E)

13. **Problem Figures**



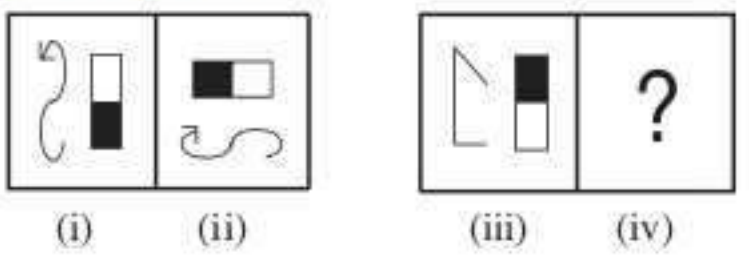
(i) (ii) (iii) (iv)

Answer Figures



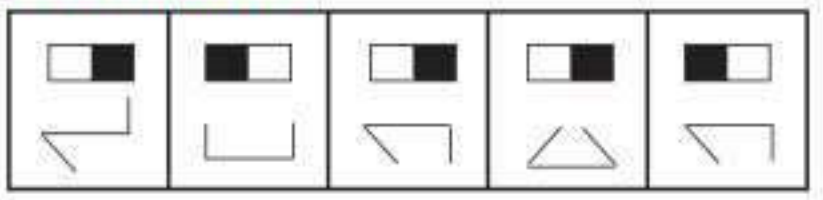
(A) (B) (C) (D) (E)

14. **Problem Figures**



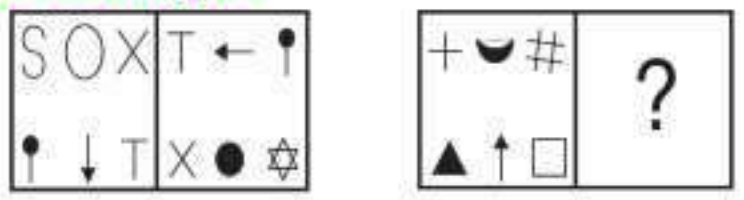
(i) (ii) (iii) (iv)

Answer Figures



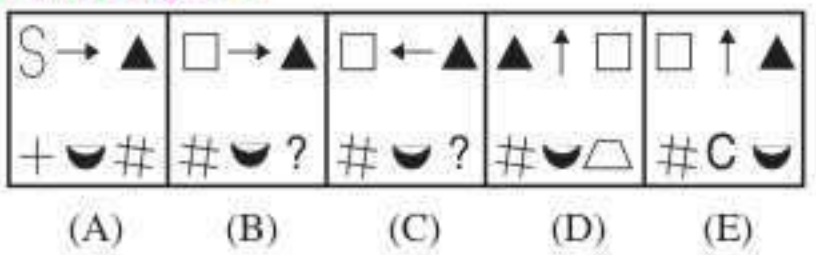
(A) (B) (C) (D) (E)

15. **Problem Figures**



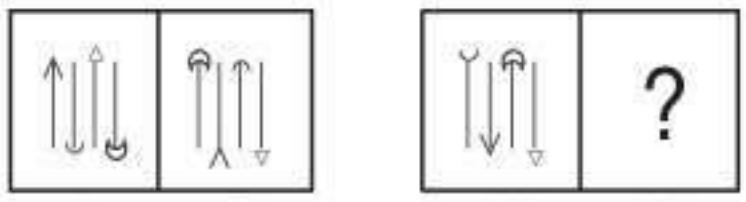
(i) (ii) (iii) (iv)

Answer Figures



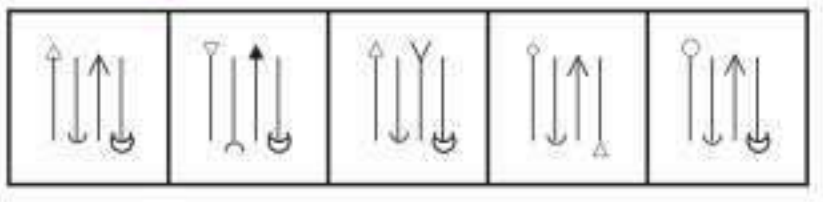
(A) (B) (C) (D) (E)

16. **Problem Figures**



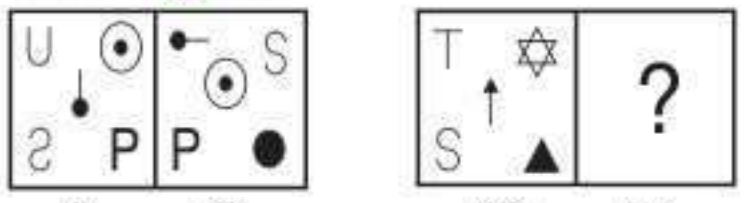
(i) (ii) (iii) (iv)

Answer Figures



(A) (B) (C) (D) (E)

17. **Problem Figures**



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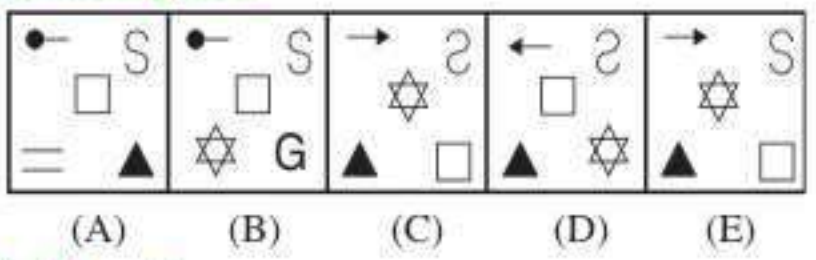

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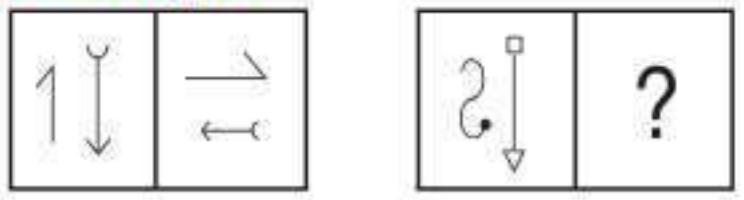

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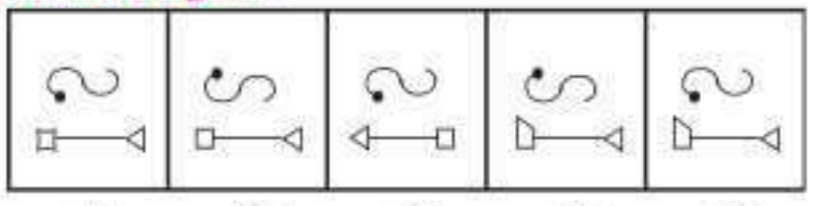

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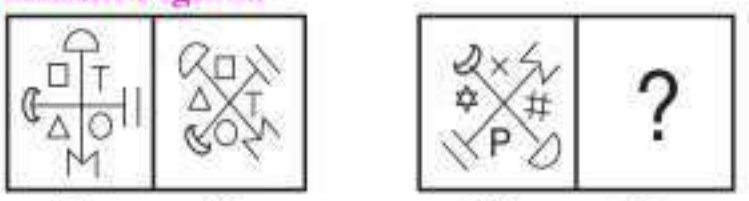

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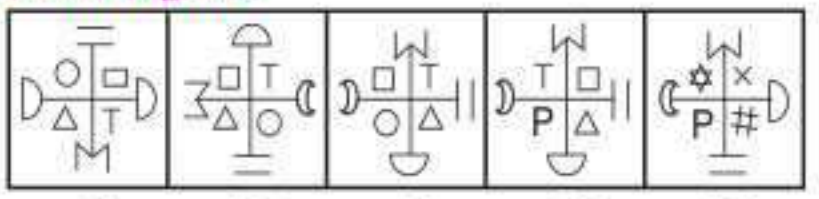

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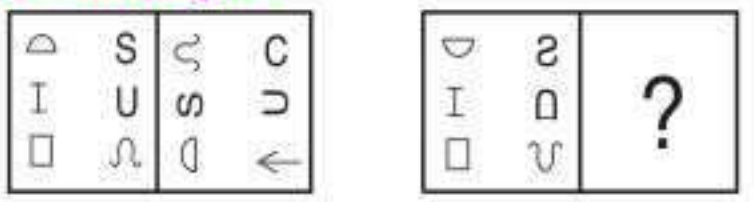

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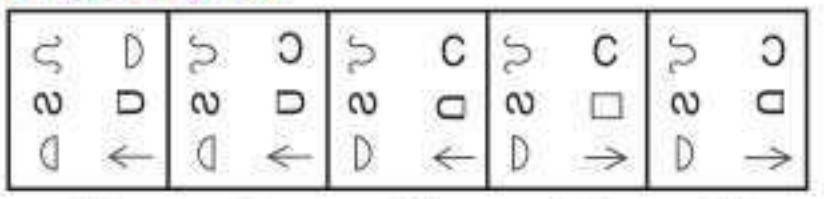

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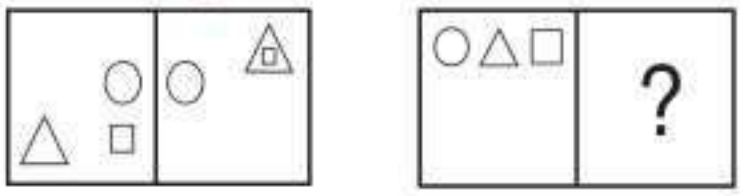

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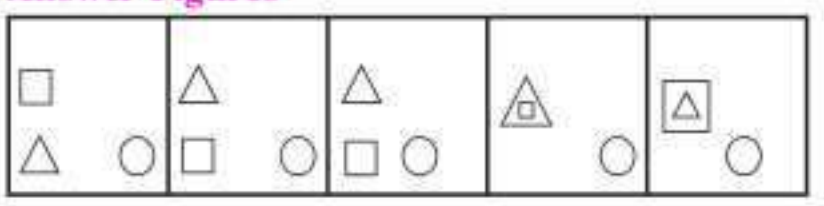

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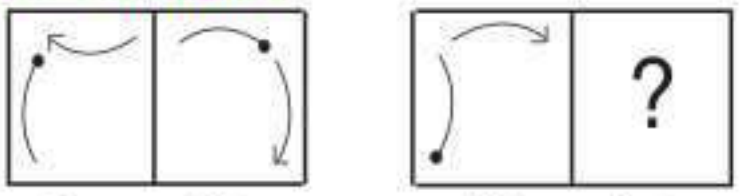

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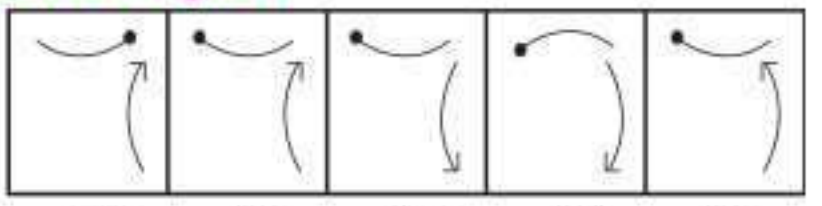

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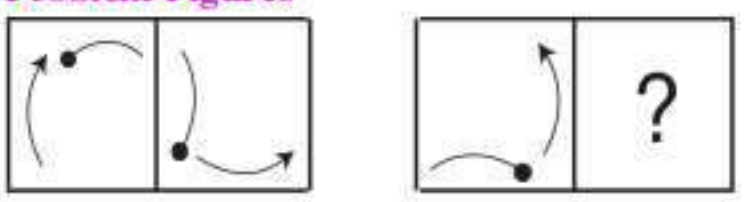

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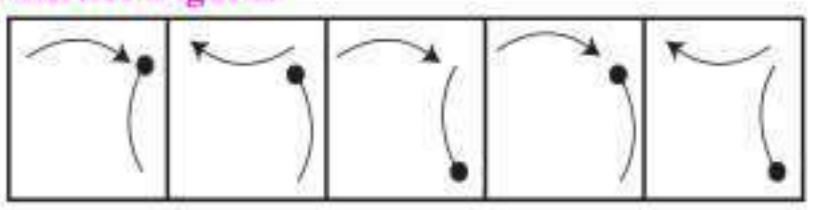

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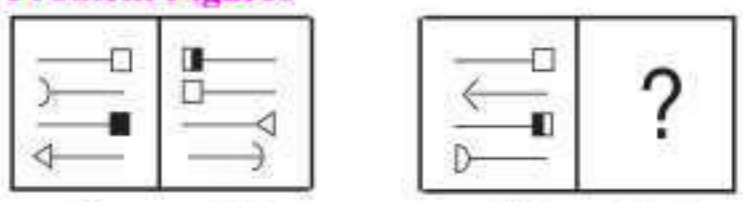

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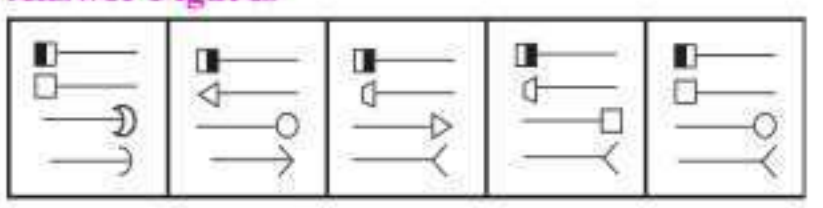

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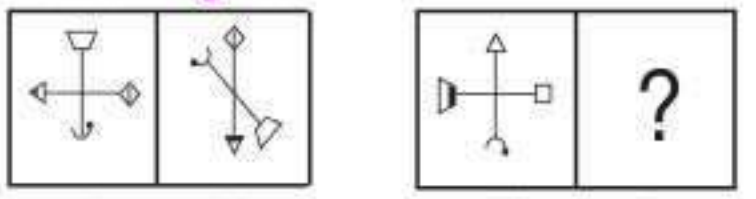

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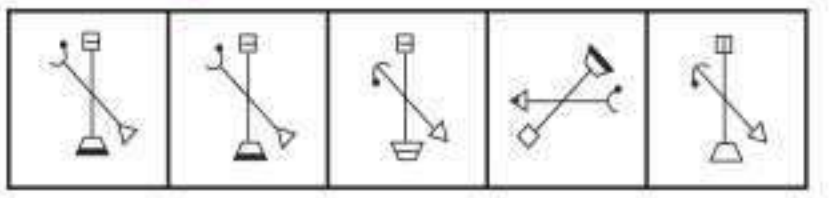

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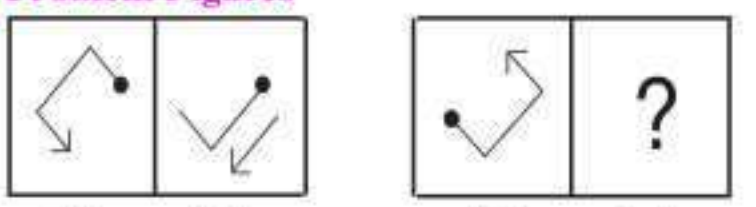

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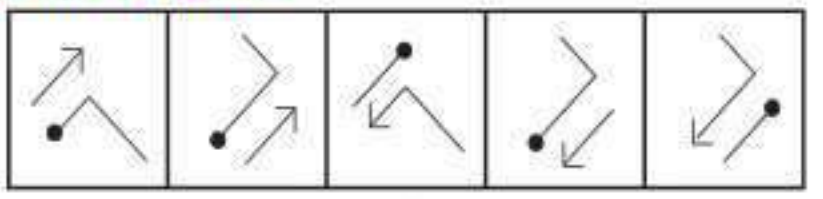

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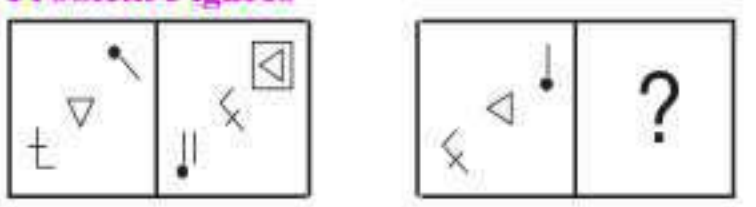

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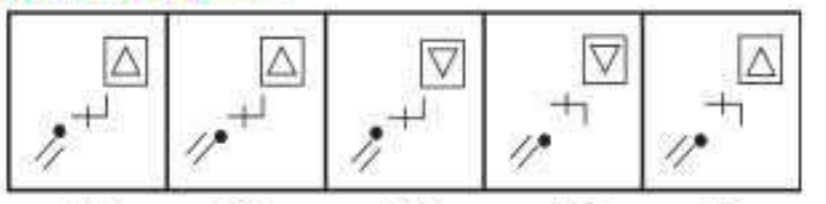

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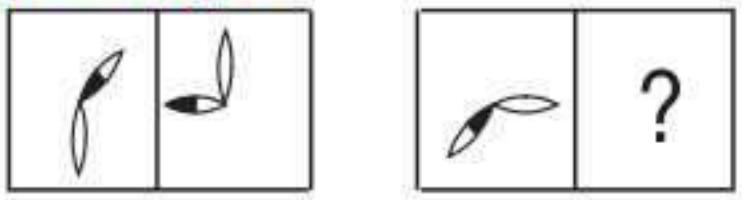

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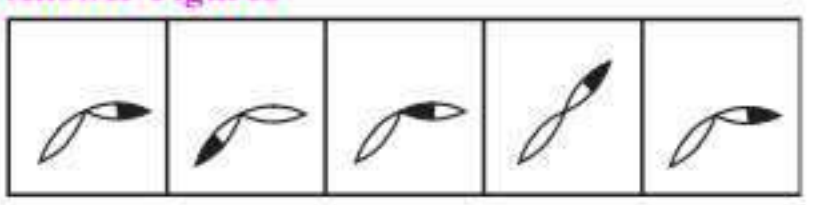

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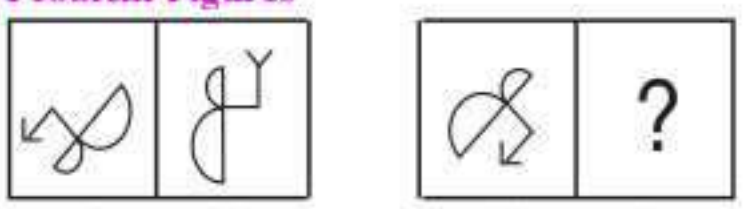

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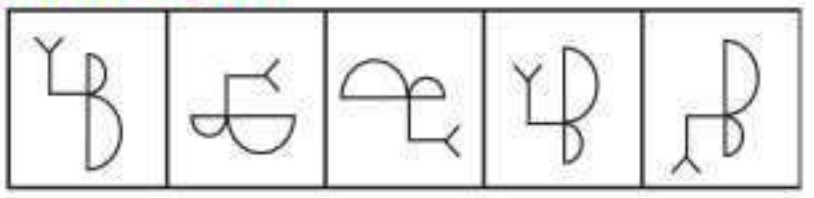

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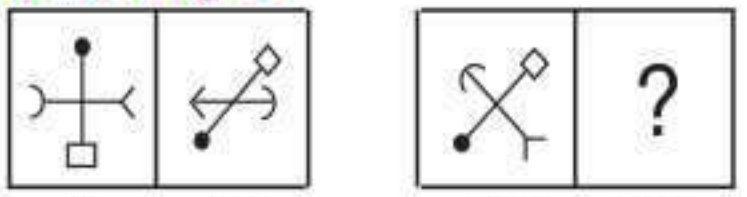

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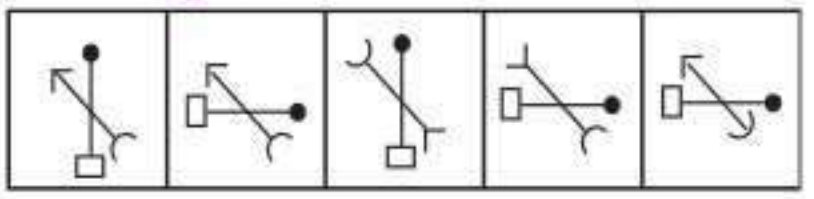

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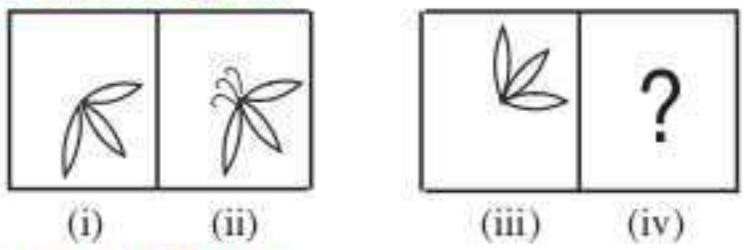
31. **Problem Figures**



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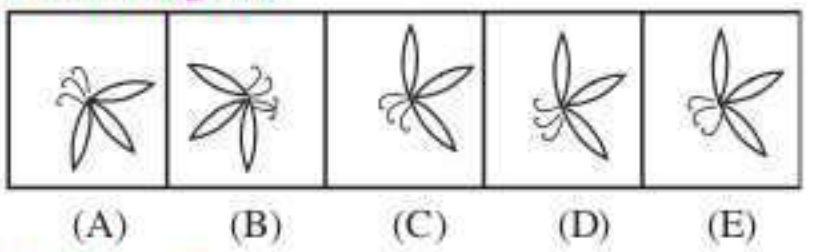

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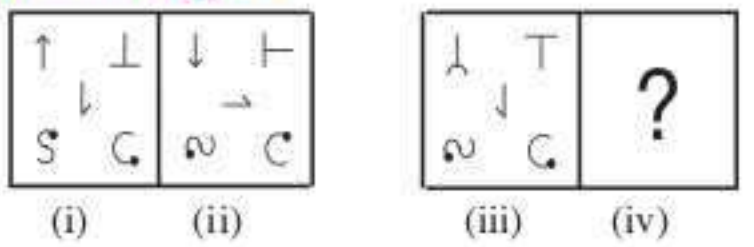

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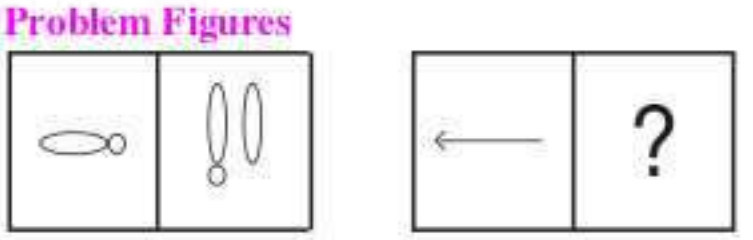

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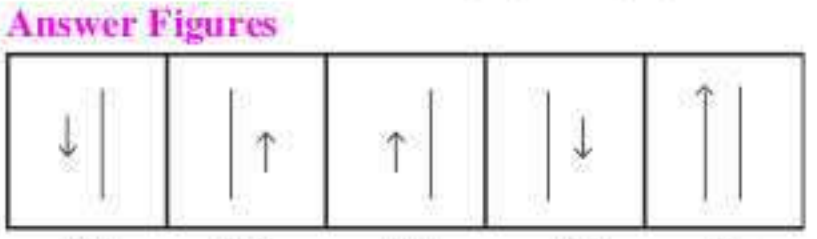

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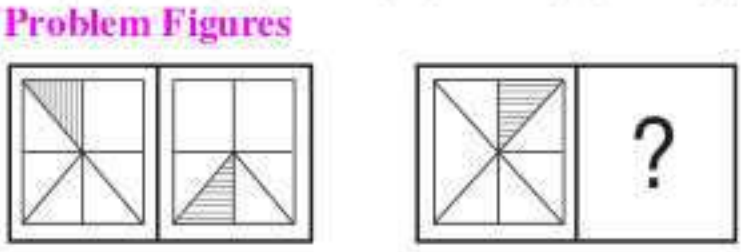

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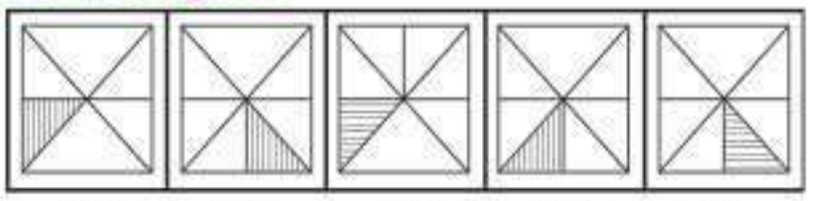

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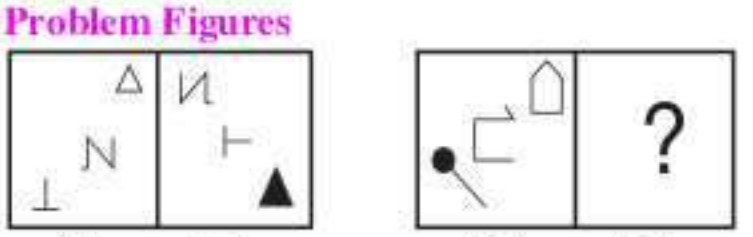
35. **Problem Figures**



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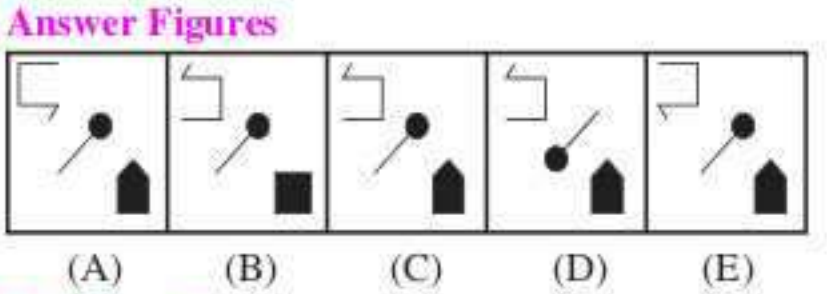

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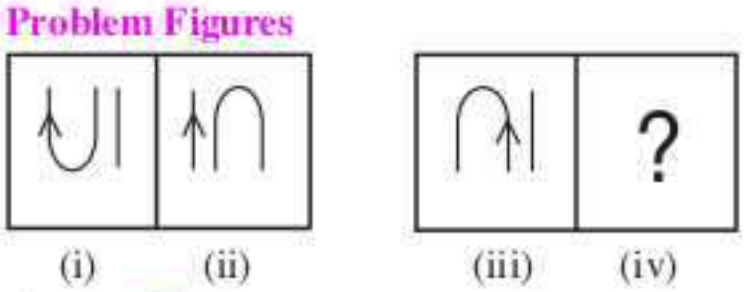
36. **Problem Figures**



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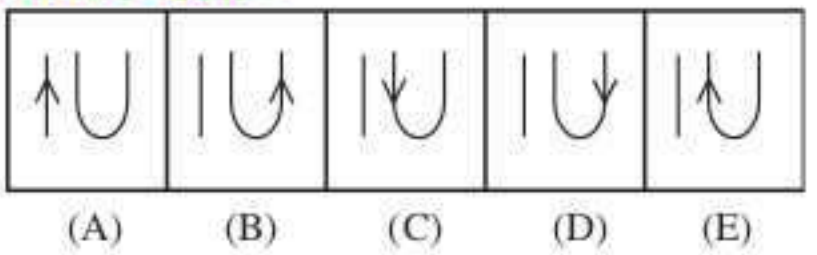

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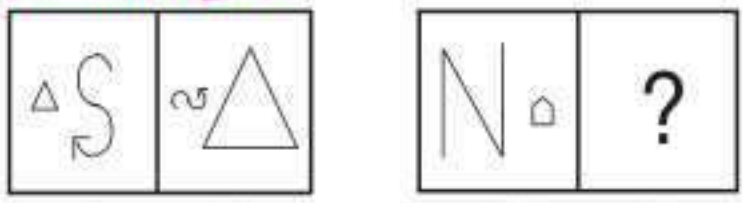

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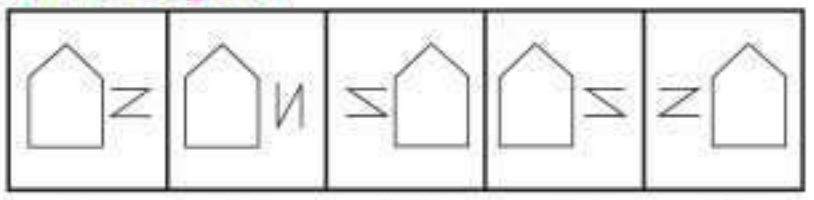

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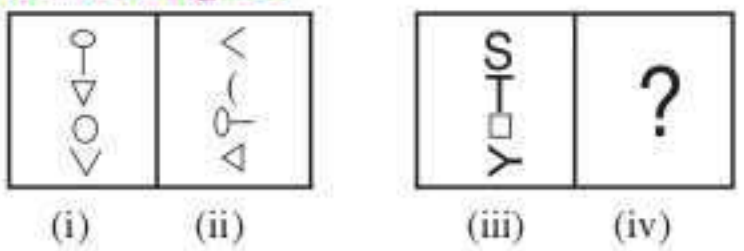

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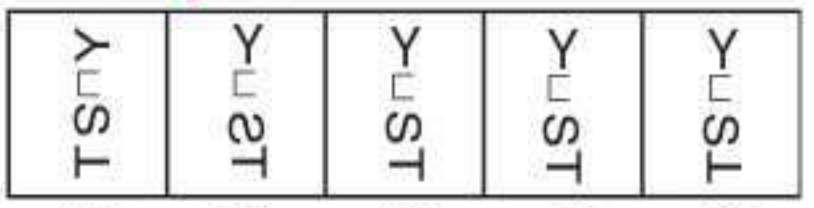

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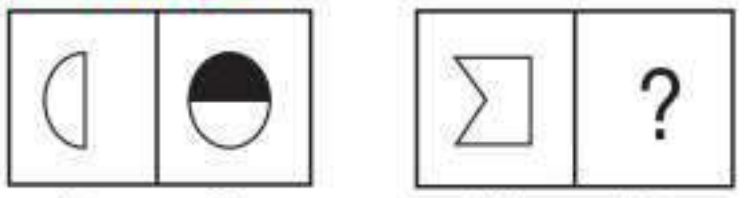

(i) (ii) (iii) (iv)

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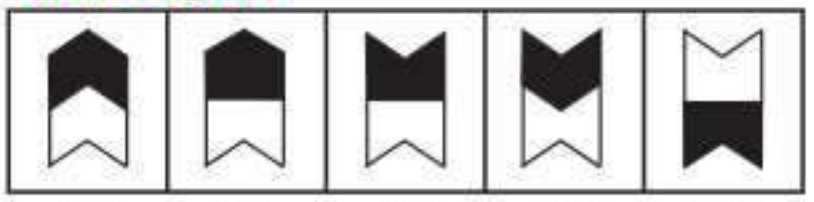

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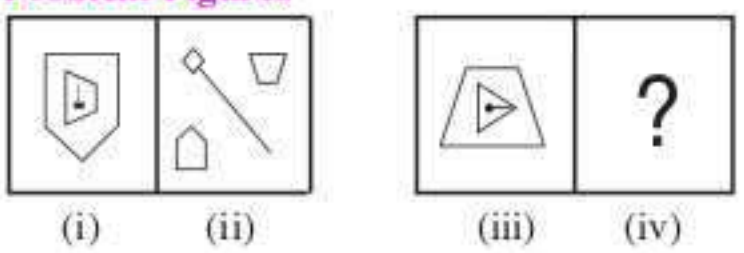
40. **Problem Figures**



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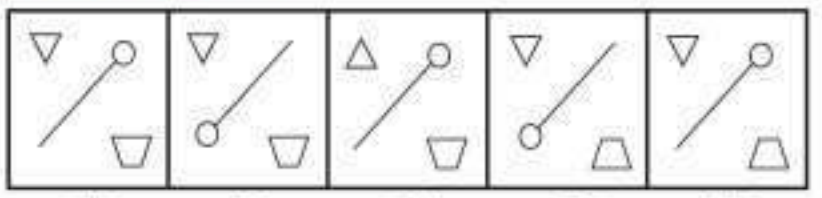

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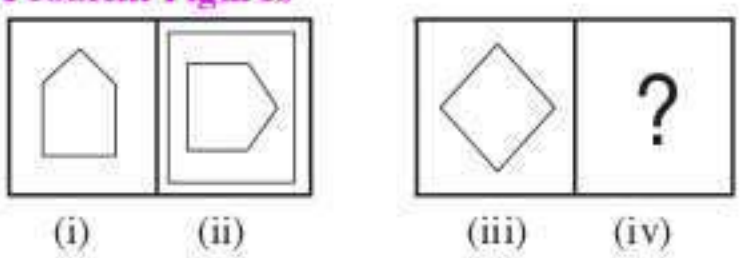
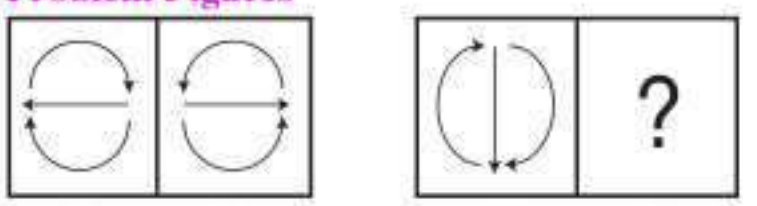
41. **Problem Figures**



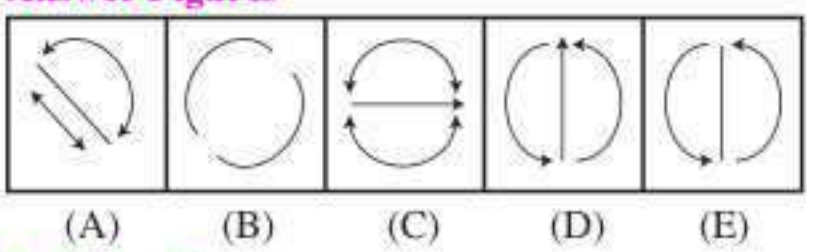
(i) (ii) (iii) (iv)

42. **Problem Figures**



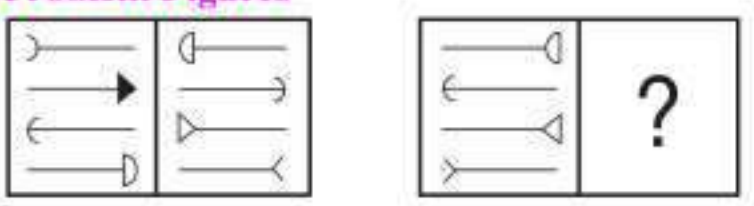
(i) (ii) (iii) (iv)

Answer Figures



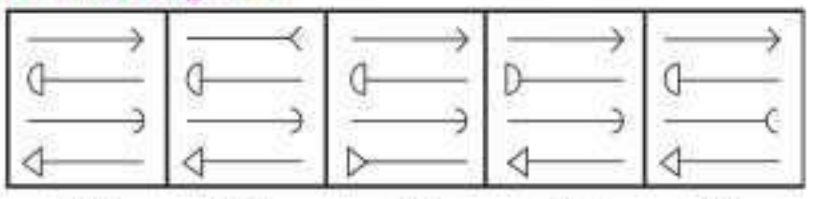
(A) (B) (C) (D) (E)

43. **Problem Figures**



(i) (ii) (iii) (iv)

Answer Figures



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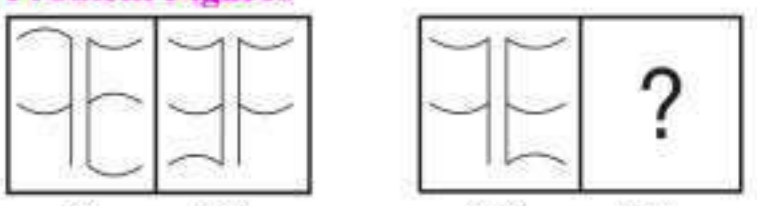
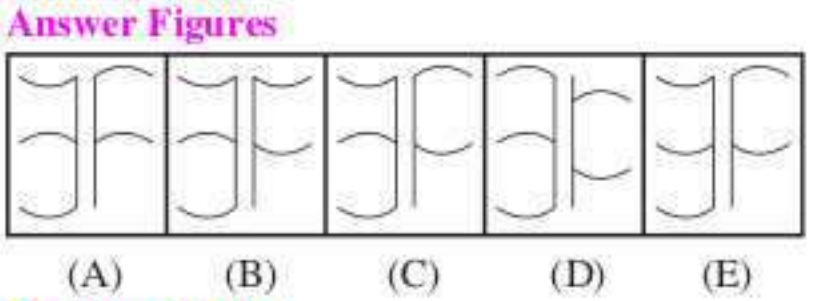
44. **Problem Figures**



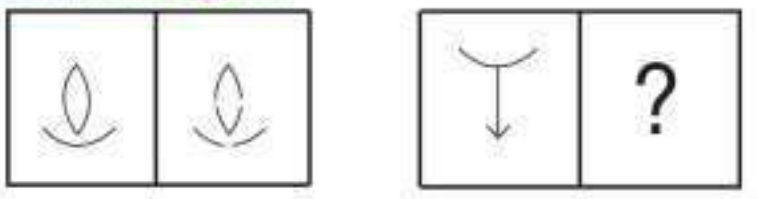
(i) (ii) (iii) (iv)

Answer Figures



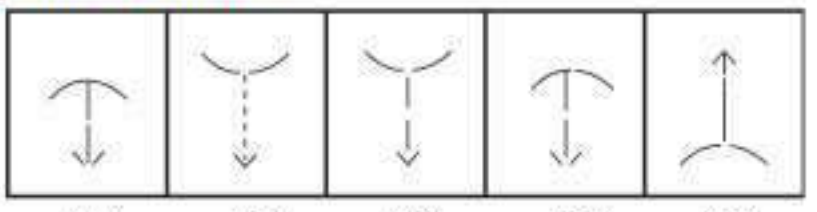
(A) (B) (C) (D) (E)

45. **Problem Figures**



(i) (ii) (iii) (iv)

Answer Figures



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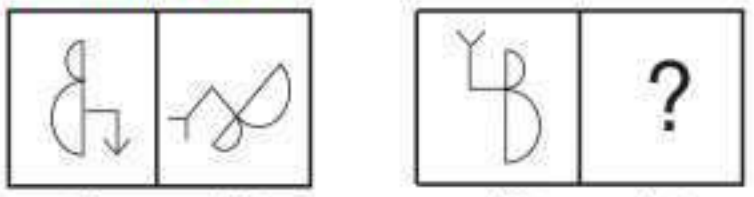
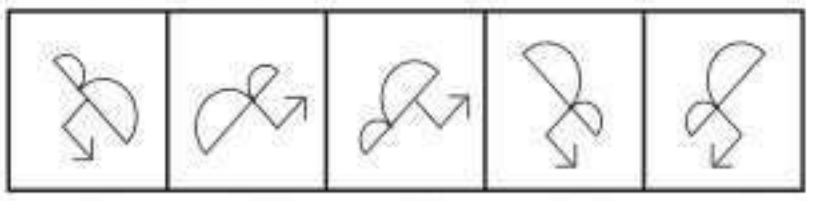
46. **Problem Figures**



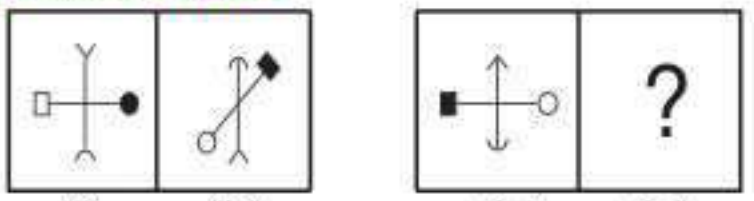
(i) (ii) (iii) (iv)

Answer Figures



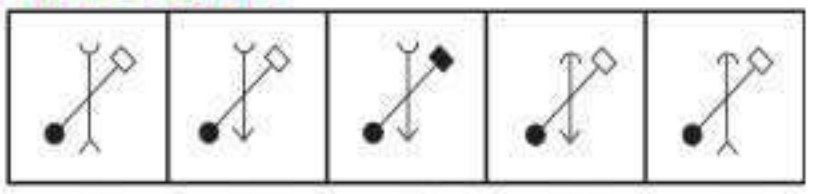
(A) (B) (C) (D) (E)

47. **Problem Figures**



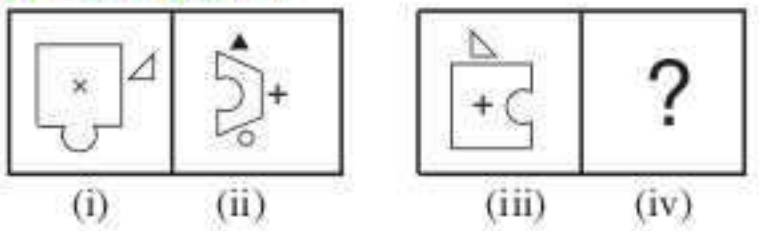
(i) (ii) (iii) (iv)

Answer Figures



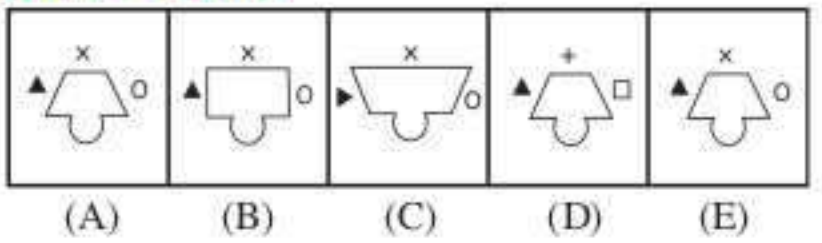
(A) (B) (C) (D) (E)

48. **Problem Figures**



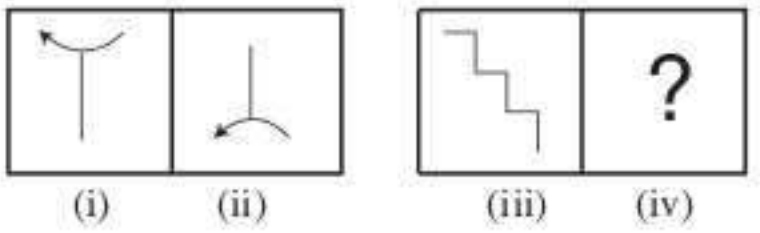
(i) (ii) (iii) (iv)

Answer Figures



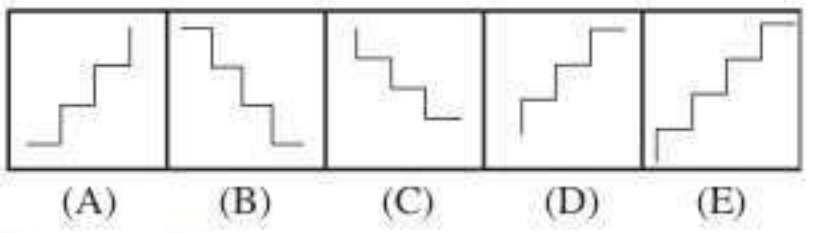
(A) (B) (C) (D) (E)

49. **Problem Figures**



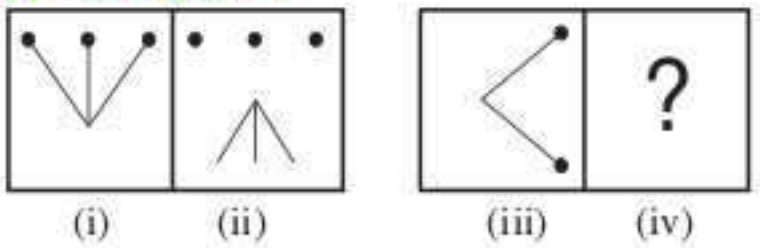
(i) (ii) (iii) (iv)

Answer Figures



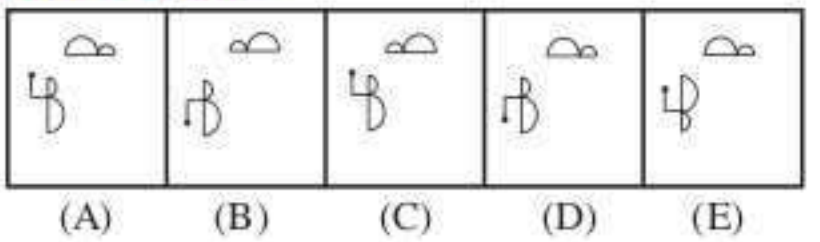
(A) (B) (C) (D) (E)

50. **Problem Figures**



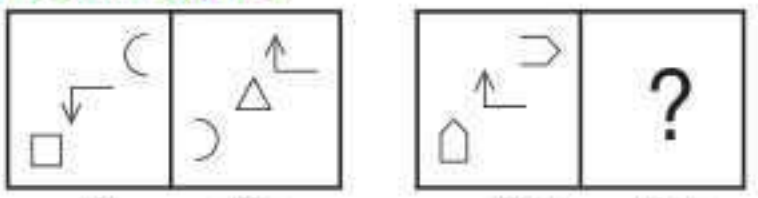
(i) (ii) (iii) (iv)

Answer Figures



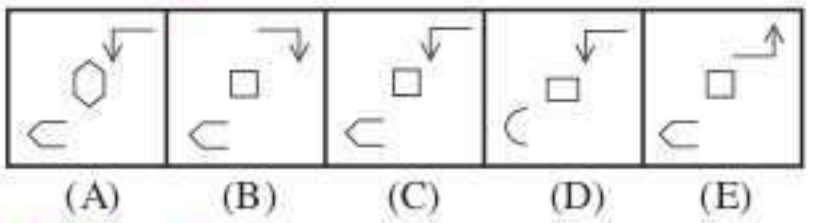
(A) (B) (C) (D) (E)

51. **Problem Figures**



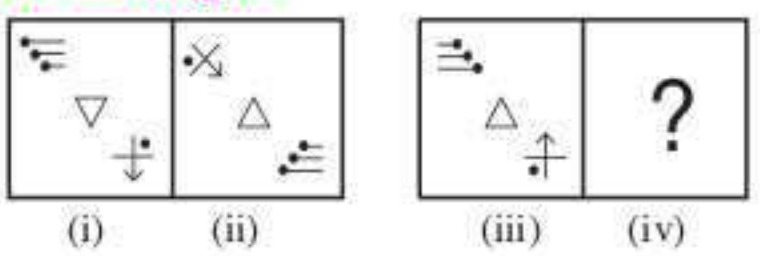
(i) (ii) (iii) (iv)

Answer Figures



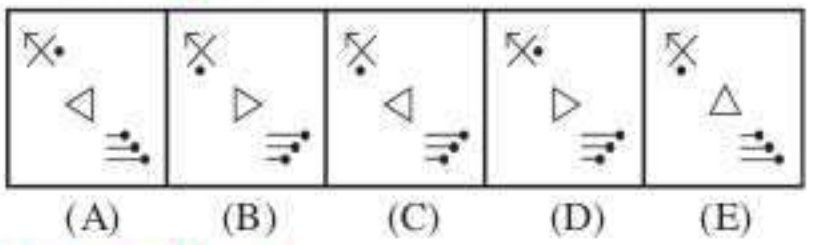
(A) (B) (C) (D) (E)

52. **Problem Figures**



(i) (ii) (iii) (iv)

Answer Figures



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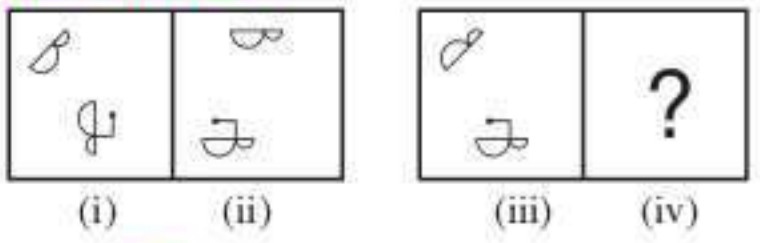
53. **Problem Figures**

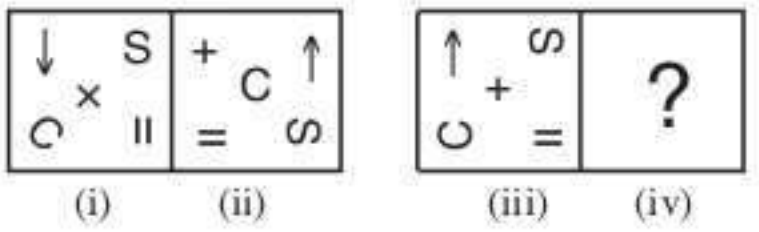


(i) (ii) (iii) (iv)

Answer Figures

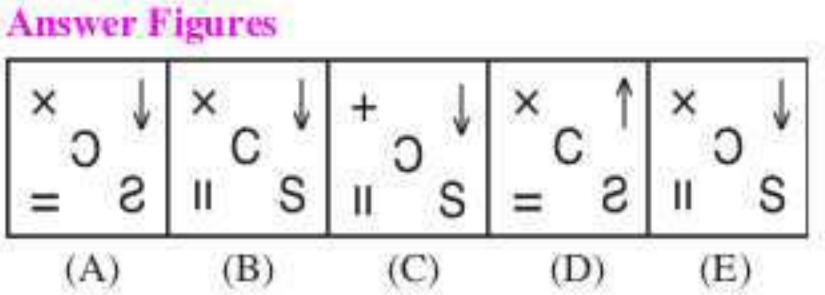
(A) (B) (C) (D) (E)

54. **Problem Figures**



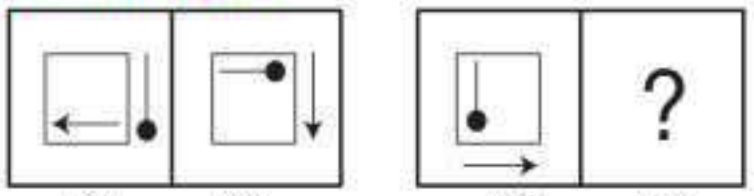
(i) (ii) (iii) (iv)

Answer Figures



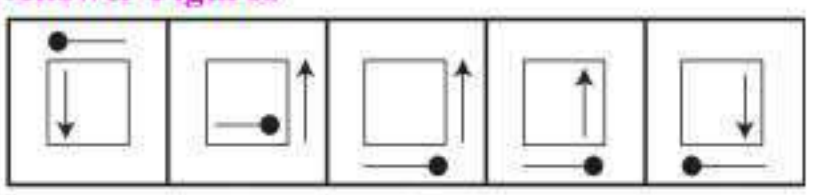
(A) (B) (C) (D) (E)

55. **Problem Figures**



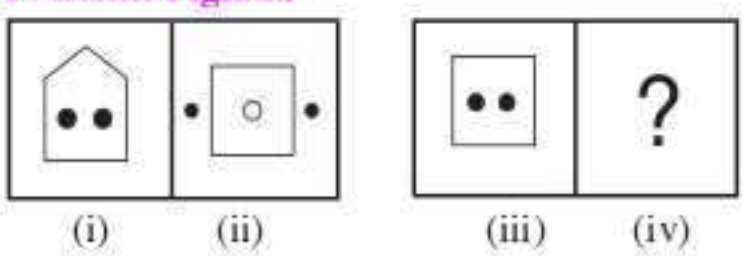
(i) (ii) (iii) (iv)

Answer Figures



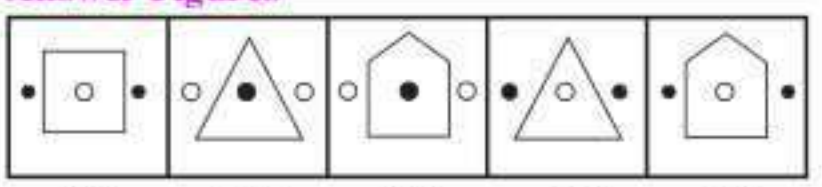
(A) (B) (C) (D) (E)

56. **Problem Figures**



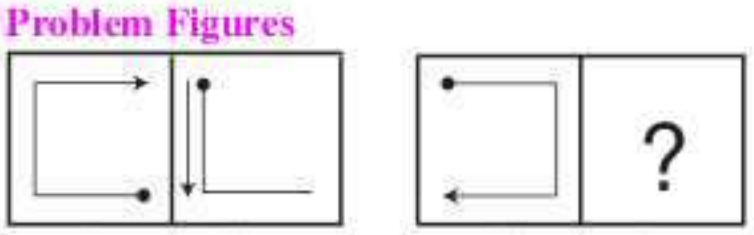
(i) (ii) (iii) (iv)

Answer Figures



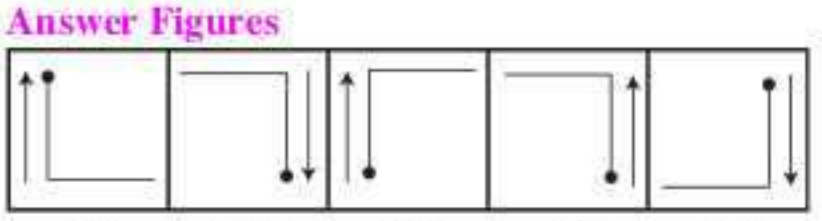
(A) (B) (C) (D) (E)

57. **Problem Figures**



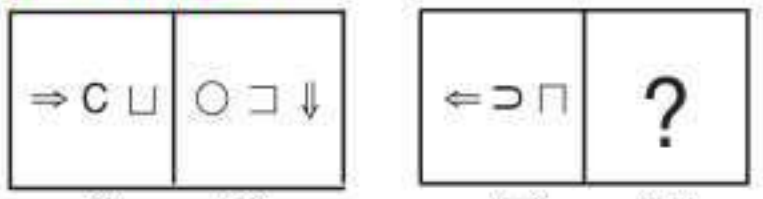
(i) (ii) (iii) (iv)

Answer Figures



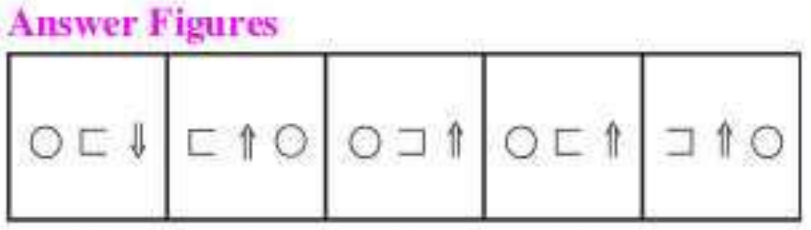
(A) (B) (C) (D) (E)

58. **Problem Figures**



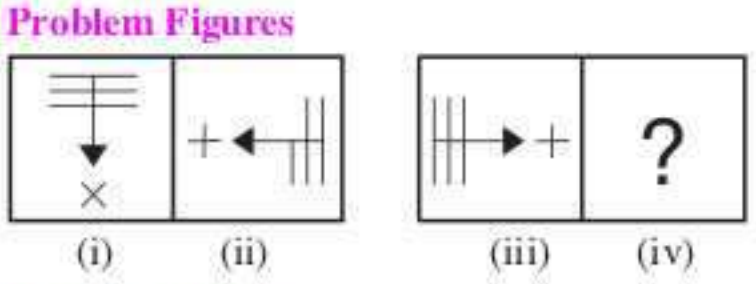
(i) (ii) (iii) (iv)

Answer Figures



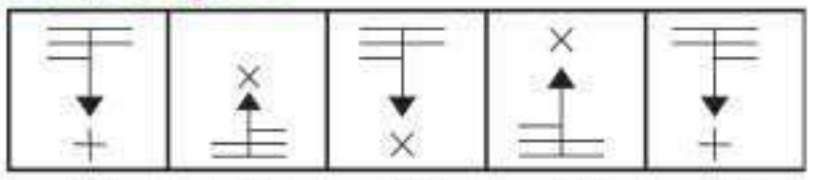
(A) (B) (C) (D) (E)

59. **Problem Figures**



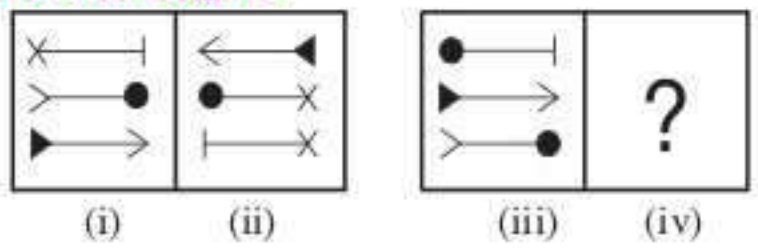
(i) (ii) (iii) (iv)

Answer Figures



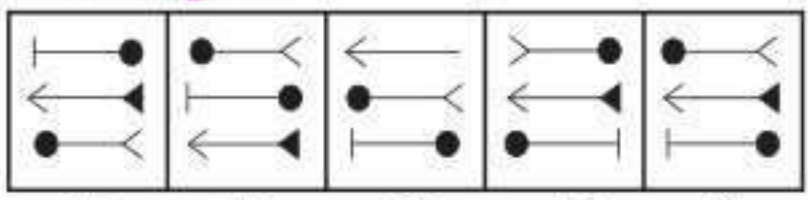
(A) (B) (C) (D) (E)

60. **Problem Figures**



(i) (ii) (iii) (iv)

Answer Figures

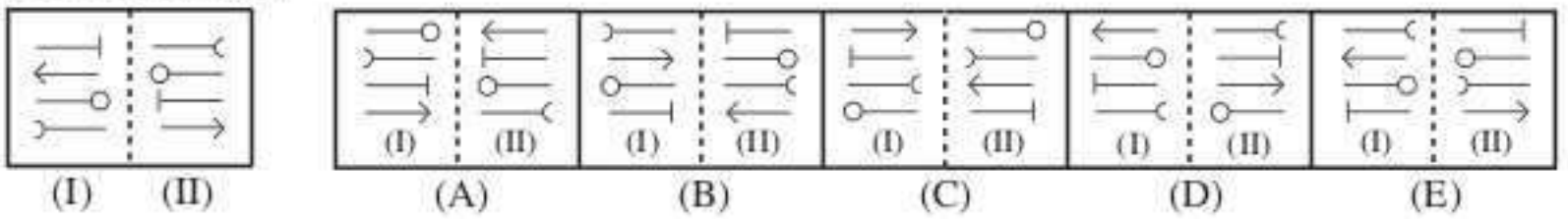


(A) (B) (C) (D) (E)

Exercise 7

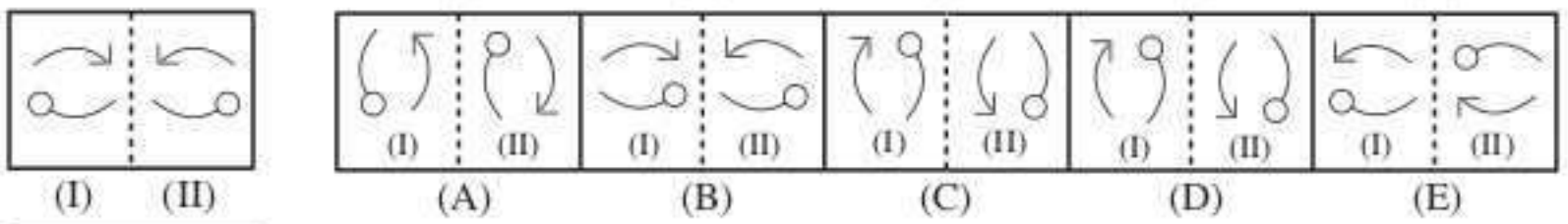
Directions—(Q. 1–6) In each of the following questions, a related pair of figures unlettered is followed by five lettered pairs of figures. Out of these five, four have relationship **similar** to that in the original pair. Only one pair of figures does not have **similar** relationship. Select that pair of figures which does not have a similar relationship to that in the unlettered pair.

1.



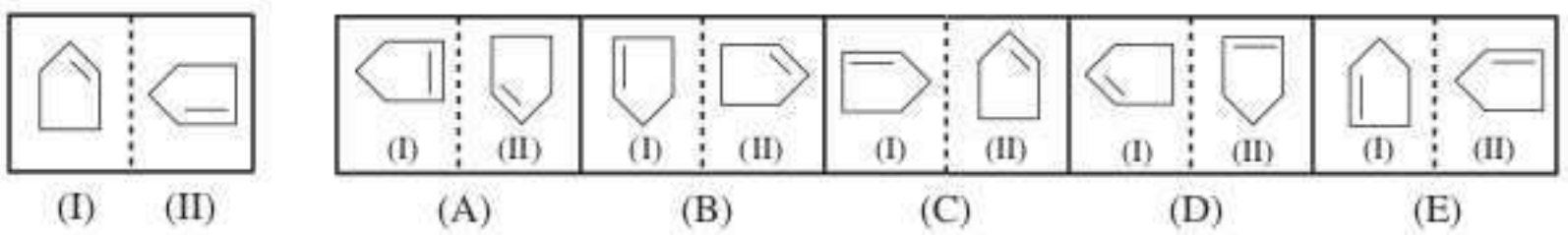
(I) (II) (A) (B) (C) (D) (E)

2.



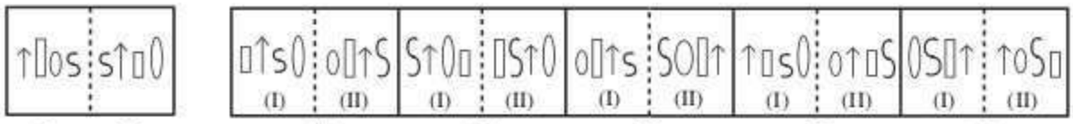
(I) (II) (A) (B) (C) (D) (E)

3.



(I) (II) (A) (B) (C) (D) (E)

4.



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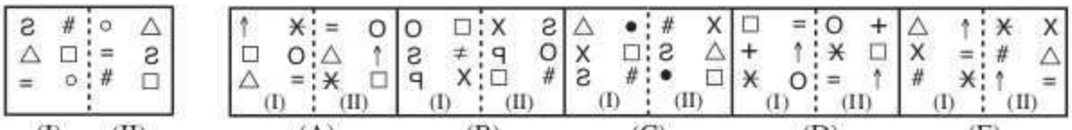
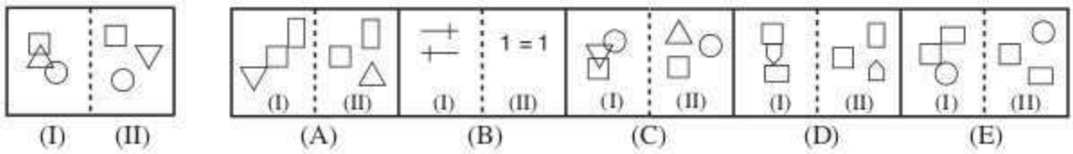
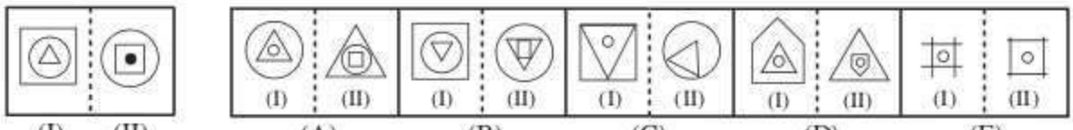


6.

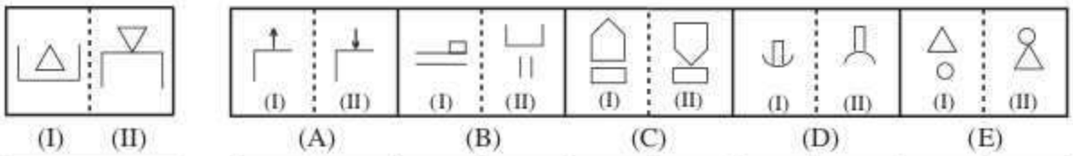


Directions—(Q. 7–25) In each of the following questions, a related pair of figures, unletter is followed by five lettered pairs of figures. Out of three five pairs of figures only one pair has relationship similar to the original pair. Select that pair of figures.

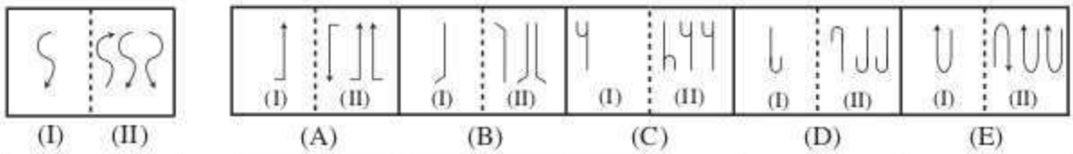
7.



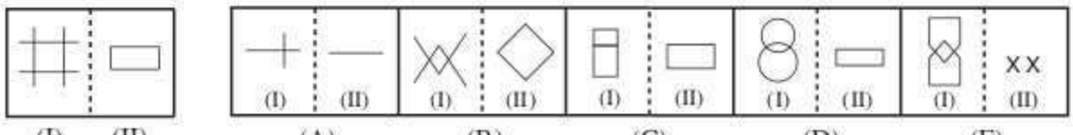
8.



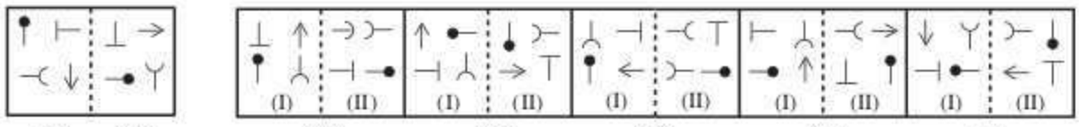
9.



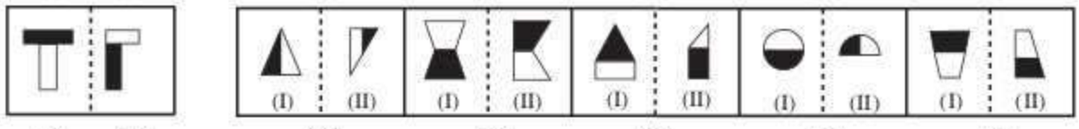
10.



11.



12.



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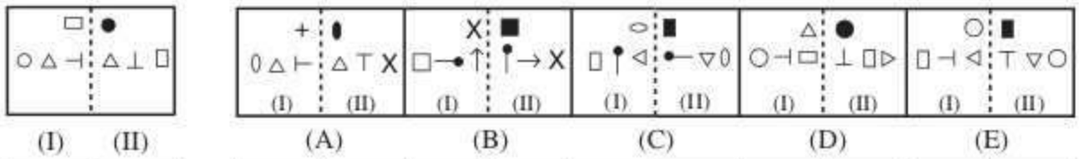

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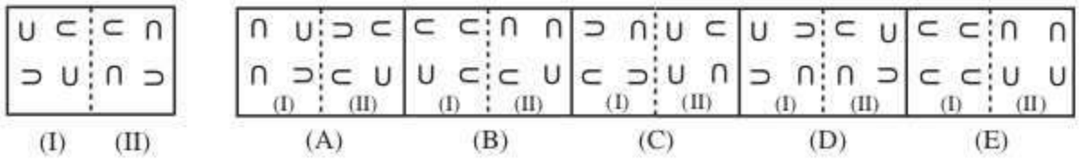
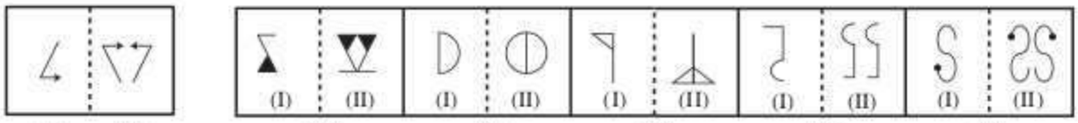


15. 

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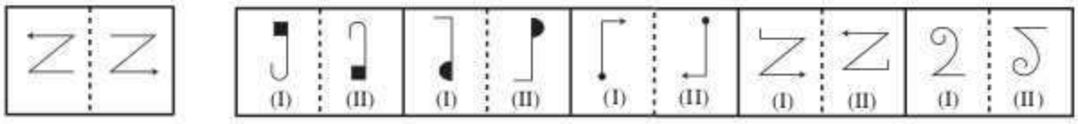
16. 

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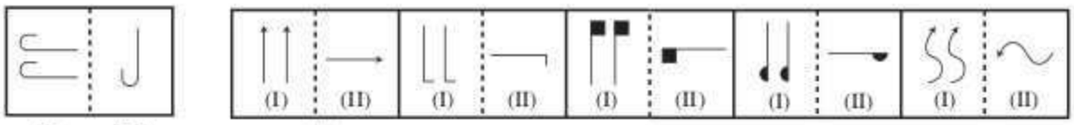
17. 

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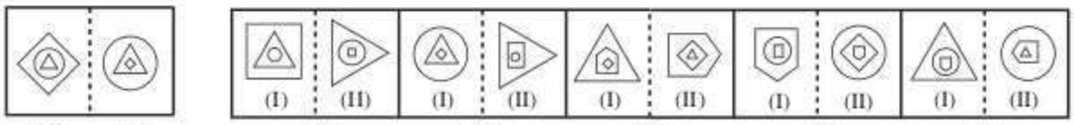
18. 

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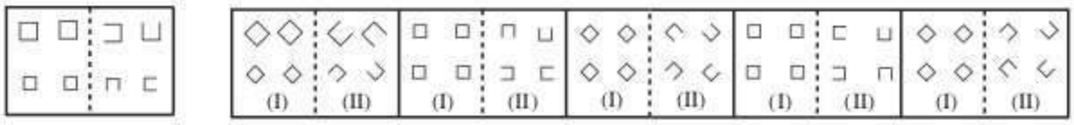
19. 

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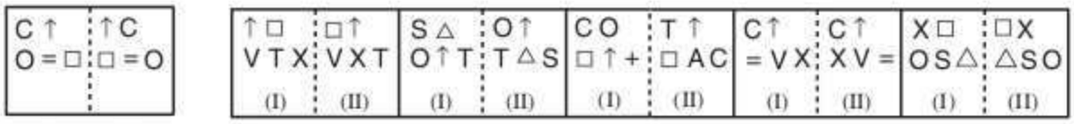
20. 

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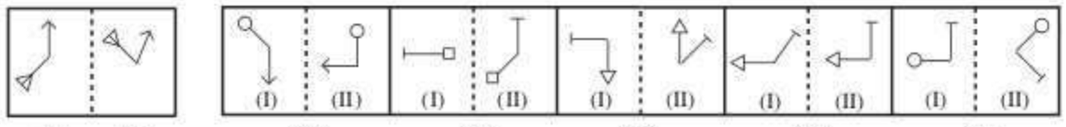
21. 

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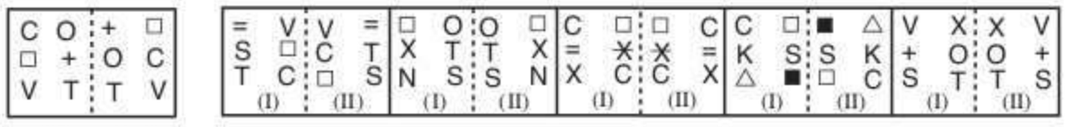
22. 

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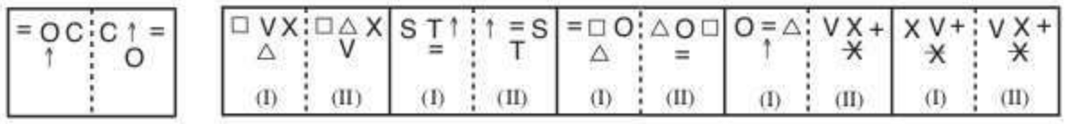
23. 

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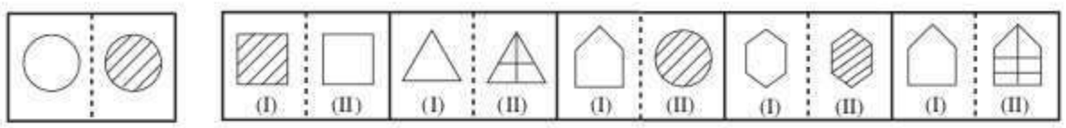
24. 

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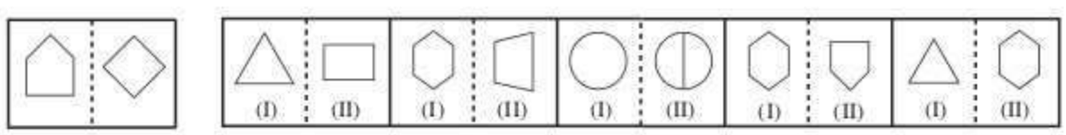
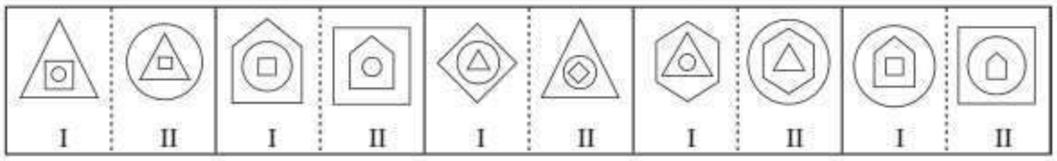
25. 

(I) (II) (A) (B) (C) (D) (E)

Exercise 8

Directions—(Q. 1–25) In each of the following questions, in four out of five pairs of figures the element I is related to element II in some particular manner. Spot out the pair in which this relationship does not exist between the figures.

1.



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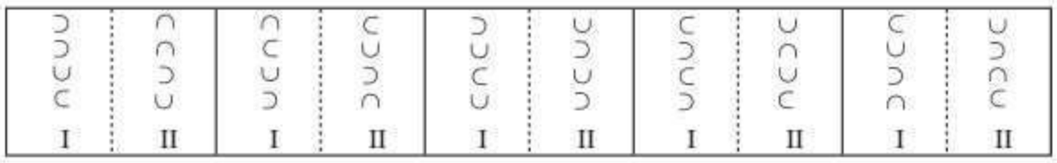

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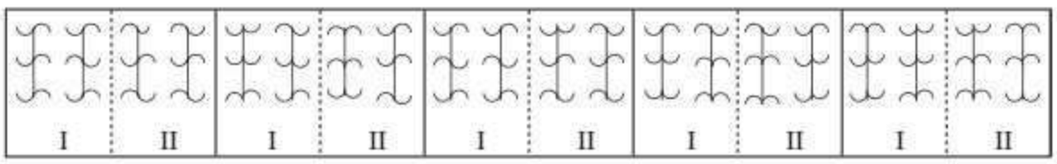

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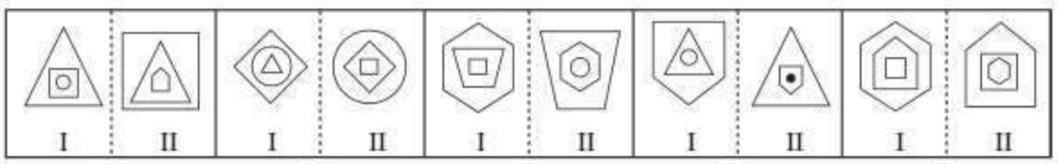

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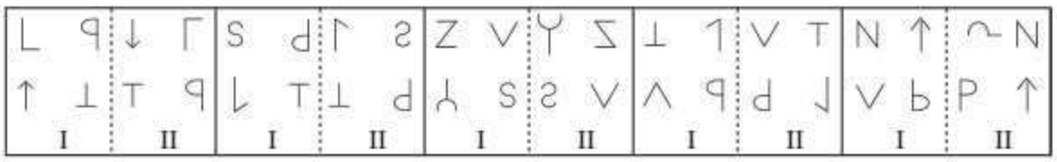

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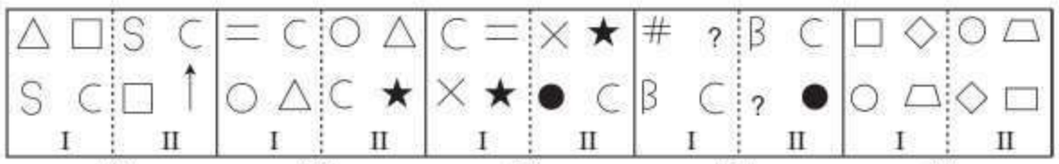

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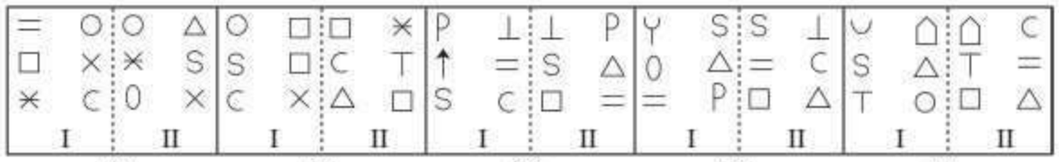

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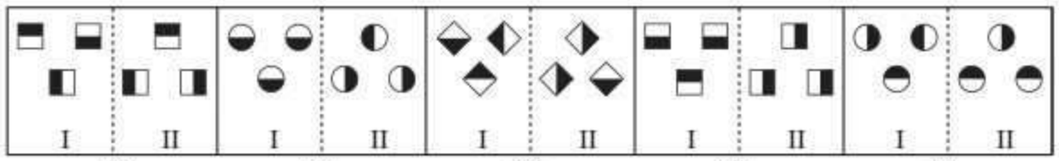

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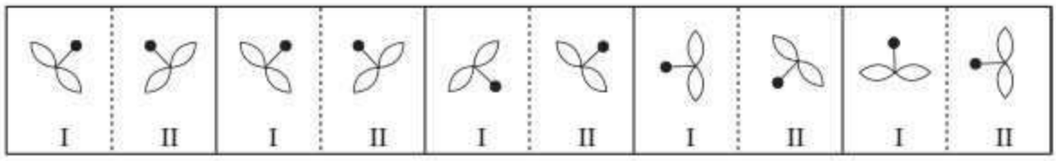

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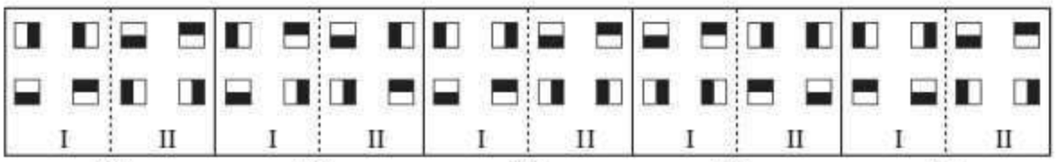

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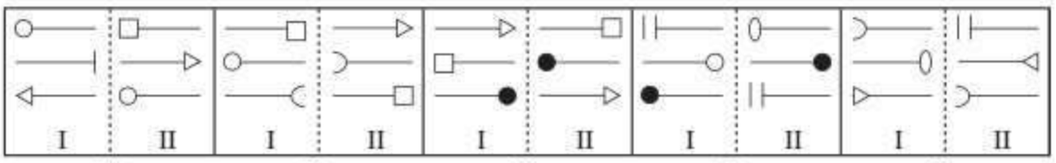

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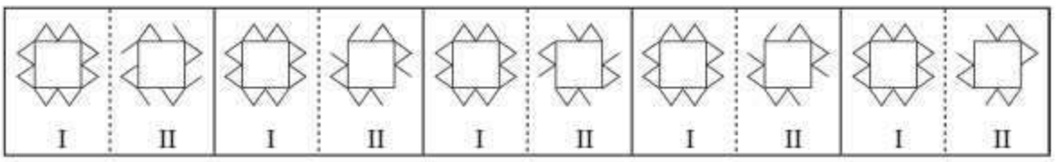

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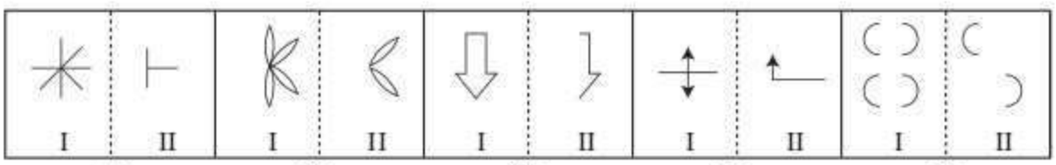

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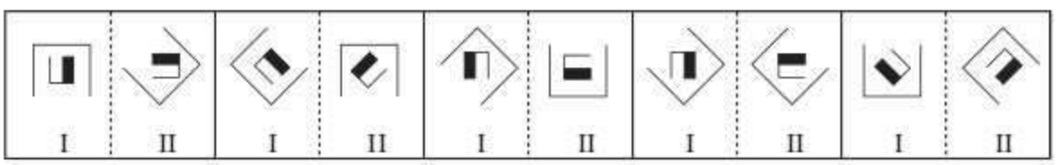

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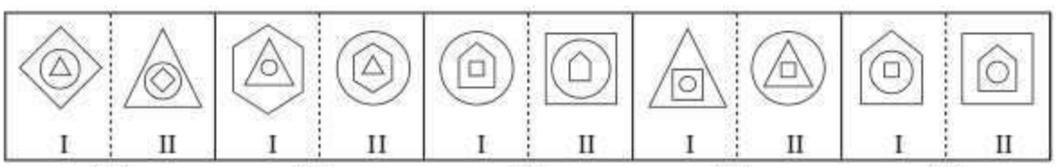

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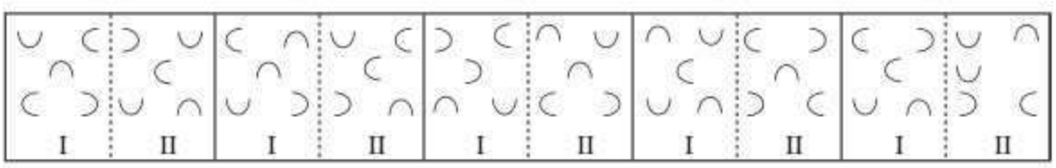

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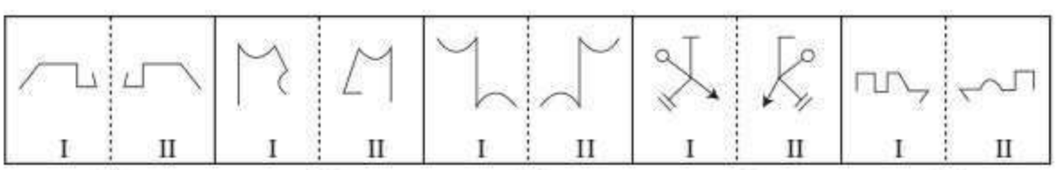

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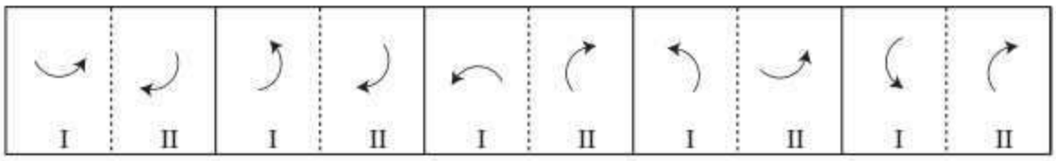

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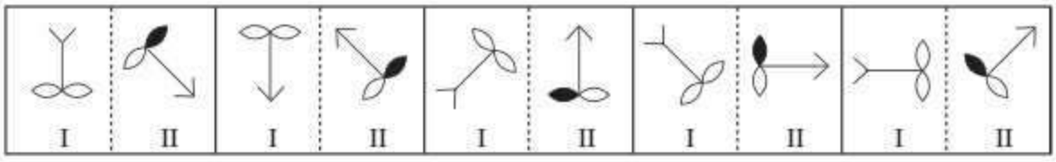

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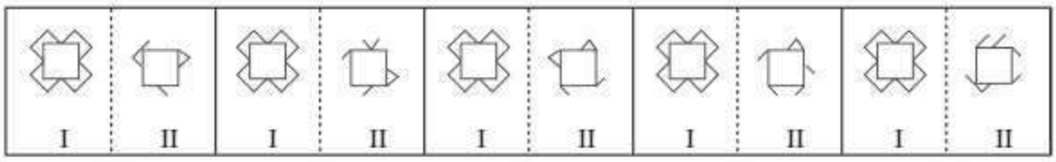

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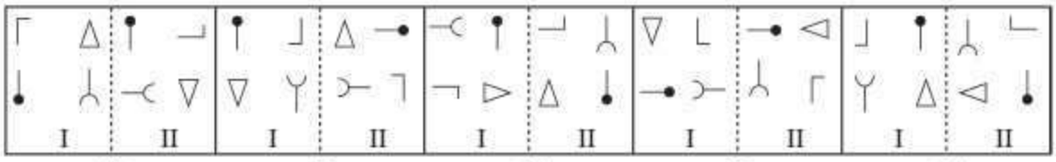

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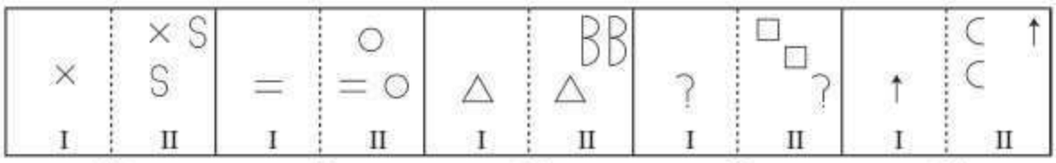

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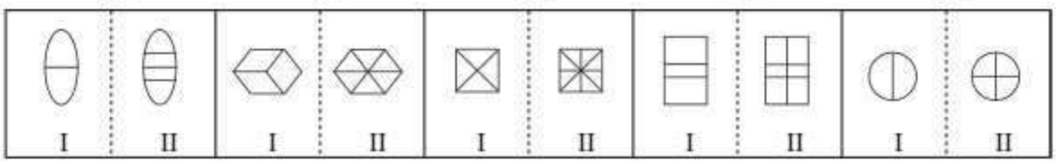

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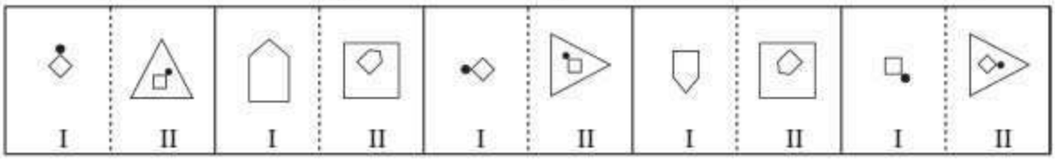


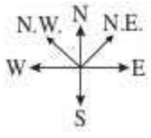
(A) (B) (C) (D) (E)

Answers with Explanations

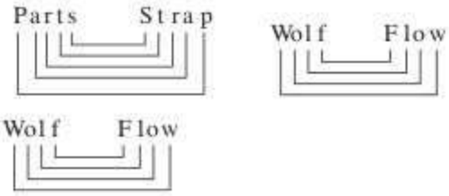
Exercise 1

1. (D) As 'Vivarium' is a place indoors where animals are kept in conditions that are as similar as possible to their natural way. In the same way 'Aquarium' is the place environment.
2. (C) As 'Conduction' is the property found in 'Metal' in the same way 'Inflammability' is the property found in 'Plastic'.
3. (D) As 'Grease' is prepared from 'Wax' in the same way 'Curd' is prepared from 'Milk'.
4. (C) As fast mode of 'Walk' is 'Run' in the same way fast mode of 'Breeze' is 'Wind'.

5. (A) 'Jade' is a 'Green' precious stone in the same way 'Garnet' is a 'Red' precious stone.
6. (D) As 'Smoke' leads to 'Pollution' in the same way 'War' leads to 'Destruction'.
7. (C) As Indolence and Work are opposite to each other in the same way Taciturn and Speak are opposite to each other.
8. (D) As 'Cat' is mother of 'Kitten' in the same way 'Woman' is mother of 'Baby'.
9. (A) Much is used for 'Measure' in the same way 'Many' is used in 'Count'.
10. (C) As 'Ophthalmia' is a disease of 'Eye' in the same way 'Rickets' is the disease of 'Bone'.
11. (C) As 'Kathak' is common in 'U. P.' in the same way 'Odyssey' is common in 'Orissa'.
12. (D) As the foot of the 'Horse' is called 'Hoof' in the same way the foot of the 'Eagle' is called 'Claw'.
13. (C) As 'Knowledge' is achieved by 'Reading' in the same way 'Experience' is achieved by 'Work'.
14. (A) As the cry of 'Dog' is called 'Bark' in the same way the cry of 'Goat' is called 'Bleat'.
15. (D) As the dwelling place of 'Rabbit' is 'Burrow' in the same way the dwelling place of 'Lunatic' is 'Asylum'.
16. (C) As 'Flower' is made from 'Bud' similarly 'Fruit' is made from 'Flower'.
17. (B) As 'Table' is made with 'Wood' in the same way 'Shirt' is made with 'Cloth'.
18. (A) As 'Teaching' is done by 'Teachers' in the college similarly treatment is done by 'Doctors' in the 'Hospital'.
19. (D) As 'Students' read in 'College' similarly 'Patients' are treated in 'Hospital'.
20. (C) As 'Peacock' is the National Bird of 'India', similarly 'Bear' is the National Animal of 'Russia'.
21. (D) As 'Cat' has 'Paw' similarly 'Horse' has 'Hoof'.
22. (C) As 'Ornithologist' is a specialist of 'Birds' similarly 'Archaeologist' is a specialist of 'Archaeology'.
23. (A) A 'Shade' is obtained from 'Tree', similarly 'Warmth' is obtained from 'Self-respect'.
24. (D) As 'Tiger' is found in 'Forest', similarly 'Otter' is found in 'Water'.
25. (C) As water of a 'River' 'Flows', similarly water of 'Pool' 'Stagnant'.
26. (B) As 'Diamond' is made of 'Carbon', similarly 'Ruby' is made of 'Corundum'.
27. (D) A 'Priest' wears 'Cassock' while 'Graduate' wears 'Gown'.
28. (D) As 'Chairman' is the highest authority in a 'Conference' similarly 'Editor' is in 'Newspaper'.
29. (C) As 'North–West' is 135° clockwise from 'South' in the same way 'North–East' is 135° clockwise from 'West'.



30. (D) Similarly,



31. (C) As Bat : Cat (+1) Similarly, Eat : Fat (+1)

Exercise 2

1. (C) As 'Seed' is obtained from 'Fruit', similarly 'Fruit' is obtained from 'Flower'.
2. (B) As 'Iron' is 'Metal' in the same way 'Brass' is an 'Alloy'.
3. (B) As, 'Light' is related to 'Visual'. Similarly, 'Sound' is related to 'Audio'.
4. (D) As, 'Fruit' is related to 'Guava'. Similarly, 'Root' is related to 'Carrot'.
5. (A) As, 'Radish' is a 'Root'. Similarly, 'Brinjal' is a 'Fruit'.
6. (E)
7. (D) As, 'Seed' can get from 'Fruit'. Similarly, 'Fruit' can get from 'Flower'.
8. (B) As 'Come' is opposite to 'Go', similarly 'Low' is opposite to 'High'.
9. (C) As 'Petal' is a part of 'Flower', similarly 'Player' is a part of 'Team'.
10. (C) As, Jackal is carnivorous. Similarly, Goat is herbivorous.
11. (C) As 'If' is the indicator of 'Condition' in the same way 'But' is the indicator of Opposition.
12. (B) As the dwelling place of the Man is known by 'House' in the same way the dwelling place of 'Cow' is known as Shed.
13. (E) As in the 'Class' students look at the Blackboard in the same way in the 'Cinema Hall' the Spectators look at the Screen.
14. (C) Only radish grows under-ground.
15. (D) As from 'House' we get 'Shelter' in the same way, from the 'Soap' we get 'Cleanliness'.
16. (C) As 'Crime' is treated in a 'Court' in the same way, 'Sickness' is treated in the Hospital.
17. (C) As a 'Millionaire' has much 'Wealth' in the same way, an 'Intelligent'person has much 'Wisdom'.
18. (E) As a 'Mason' builds a 'House' in the same way a 'Carpenter' builds 'Chair'.
19. (A) As from 'Television' we get news in the same way, from 'Telephone' we get 'Message'.
20. (D) As in 'Fan' we use 'Feathers' in the same way in the 'Wheel' we use 'Spokes'.
21. (C) As in the making of 'Shirt' we use 'Cloth' in the same way in the making of 'Shoe' we use 'Leather'.

22. (B) As a 'Tailor' makes clothes from 'Cloth' in the same way a 'Cobbler' makes items from 'Leather'.

23. (E) As a 'Pen' is an important item in the 'Stationery' in the same way 'Chair' is an important item in the 'Furniture'.

24. (D) As 'Cricket' is played with a 'Bat' in the same way 'Hockey' is played with a 'Stick'.

25. (C) As 'Wings' help the 'Birds' to fly in the same way 'Fins' help the 'Fishes' to swim.

26. (D) As 'Hill' is the small 'Mountain' in the same way 'Shrub' is the small 'Tree'.

27. (B) As 'Tree' gives us 'Wood' in the same way 'Sheep' gives us 'Wool'.

28. (E) As 'Guru Dwara' is the place of worship for 'Sikh' in the same way 'Fire Temple' is the place of worship for 'Parsees'.

29. (B) As 'Ravi Shankar' is a 'Sitar' Player in the same way 'Udayi Shankar' is a 'Dancer'.

30. (A) As 'Innings' is a word used in 'Badminton' in the same way 'Halfnelson' is a word used in 'Wrestling'.

31. (C) As 'Pen' is a necessary thing for a 'Writer' in the same way 'Stick' is necessary for 'Hockey Player'.

32. (C) As by seeing the 'Face' we can find out the 'Expression' of the person in the same way by seeing the 'Hand' we can find out 'Coquetry' of a person.

33. (D) As the means of transport in sea is ship, similarly the means of transport on road is bus.

34. (C) As dress is worn on body, similarly bangles are worn on 'wrist'.

35. (D) As short form of mountain is hill, similarly tank is the short form of river.

36. (C) As calf is the young one of cow, similarly kitten is the young one of cat.

37. (E) As the sound of Jackal is howl, similarly the sound of cow is moo.

38. (D) As the dwelling place of nun is convent, similarly the dwelling place of hen is cote.

39. (C) As the author of 'The Story of My Experiments with Truth' is M. K. Gandhi, similarly the author of 'Glimpses of World History' is J. L. Nehru.

Exercise 3

1. (A) As 'Word' is a group of 'Letters', similarly 'Book' is a group of 'Papers'.

2. (C) At sunrise, morning begins, similarly at sunset, night begins.

3. (D) As 'Stove' is an important item of 'Kitchen' similarly Television is an important item of living room.

4. (A) As the working field of a 'Lawyer' is a 'Court' similarly the working field of a 'Chemist' is a 'Loboratory'.

5. (B) As 'Silence' is opposite to 'Noise' similarly 'Baldness' is opposite to 'Hair'.

6. (D) As 'Wick' is a part of 'Candle', similarly 'Wheel' is a part of 'Bicycle'.

7. (C) As 'River' joints to 'Ocean', similarly 'Lane' joints to 'Road'.

8. (D) As 'Arc' is a part of 'Circle', similarly 'Segment' is a part of 'line'.

9. (D) As 'Kick' is used in the game of 'Football' similarly 'Throw' is used in the game of 'Ring'.

10. (C) As 'Glove' is worn on 'Hands', similarly 'Socks' are worn on 'Feet' .

11. (B) Second is the process of gradual disappearness of the first.

12. (D) As temperature is measured from a thermometer in the same way heart rate is measured with cardiograph.

13. (C) As 'Scales' form an outer layer of 'Fish', similarly 'Skin' forms outer layer of 'Man'.

14. (B) As 'Train' is guided by the 'Track', similarly the 'Bullet' is guided by the 'Barrel'.

15. As Chalk is used to write on a blackboard, similarly Ink is used to write on a paper.

16. (C) As a Numismatist collects coins, similarly a Philatelist collects stamps.

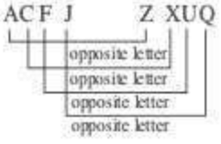
17. (C) Second is the place where the first stops.

18. (A) First word is opposite to the second word.

19. (D) First is the boundry of the second.

20. (C) Second has one more side than the first.

21. (D) As A C F J Z XUQ



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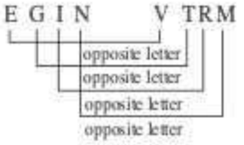


22. (C) As B $\xrightarrow{+6}$ H Similarly, N $\xrightarrow{+6}$ T

C $\xrightarrow{+6}$ I O $\xrightarrow{+6}$ U

F $\xrightarrow{+6}$ L R $\xrightarrow{+6}$ X

G $\xrightarrow{+6}$ M Q $\xrightarrow{+6}$ W

23. (A) As A $\xrightarrow{+2}$ C Similarly, E $\xrightarrow{+2}$ G

Z $\xrightarrow{+2}$ X V $\xrightarrow{+2}$ T

B $\xrightarrow{+2}$ D F $\xrightarrow{+2}$ H

Y $\xrightarrow{+2}$ N U $\xrightarrow{+2}$ S

24. (C) As C $\xrightarrow{+3}$ f Similarly, L $\xrightarrow{+3}$ o

O $\xrightarrow{+2}$ q A $\xrightarrow{+2}$ c

M $\xrightarrow{+3}$ p N $\xrightarrow{+3}$ q

P $\xrightarrow{+2}$ r G $\xrightarrow{+2}$ i

U $\xrightarrow{+3}$ x U $\xrightarrow{+3}$ x

T $\xrightarrow{+2}$ v A $\xrightarrow{+2}$ c

E $\xrightarrow{+3}$ h G $\xrightarrow{+3}$ j

R $\xrightarrow{+2}$ t E $\xrightarrow{+2}$ g

25. (B) As C $\xrightarrow{-3}$ z Similarly, s $\xrightarrow{-3}$ p

O $\xrightarrow{+3}$ r u $\xrightarrow{+3}$ x

r $\xrightarrow{-3}$ o l $\xrightarrow{-3}$ i

d $\xrightarrow{+3}$ g s $\xrightarrow{+3}$ v

e $\xrightarrow{-3}$ b u $\xrightarrow{-3}$ r

n $\xrightarrow{+3}$ q l $\xrightarrow{+3}$ o

26. (D) As B → Y Similarly, L → O

in reverse order

L → O A → Z

O → L U → F

C → X N → M

K → P N → M

E → V C → X

D → W H → S

27. (A) F $\xrightarrow{-1}$ R, Q $\xrightarrow{-1}$ E Similarly, W $\xrightarrow{-1}$ I, H $\xrightarrow{-1}$ V

I $\xrightarrow{-1}$ H D $\xrightarrow{-1}$ C

N $\xrightarrow{-1}$ M E $\xrightarrow{-1}$ D

G $\xrightarrow{-1}$ E, D $\xrightarrow{-1}$ F L $\xrightarrow{-1}$ Y, X $\xrightarrow{-1}$ K

28. (B) As B $\xrightarrow{+1}$ A Similarly, P $\xrightarrow{+3}$ O

E $\xrightarrow{+1}$ D S $\xrightarrow{+1}$ R

G $\xrightarrow{+1}$ F V $\xrightarrow{+1}$ U

K $\xrightarrow{+1}$ J Y $\xrightarrow{+1}$ X

29. (A) ABCD → WXYZ

Similarly,

EFGH → STUV

30. (C) ACEG → IKMO (+8, +8, +8, +8)

Similarly,

QSUW → YACE (+8, +8, +8, +8)

31. (B) As R $\xrightarrow{+1}$ S Similarly, T ⟶ U

E $\xrightarrow{+1}$ F H ⟶ I

A $\xrightarrow{+1}$ B I ⟶ J

S $\xrightarrow{+1}$ T N ⟶ O

O $\xrightarrow{+1}$ P K ⟶ L

N $\xrightarrow{+1}$ O

32. (D) As Similarly,

F $\xrightarrow{+1}$ G S $\xrightarrow{+1}$ T

I $\xrightarrow{+1}$ J I $\xrightarrow{+1}$ J

E $\xrightarrow{+1}$ F C $\xrightarrow{+1}$ D

L $\xrightarrow{+1}$ M K $\xrightarrow{+1}$ L

D $\xrightarrow{+1}$ E L $\xrightarrow{+1}$ M

E $\xrightarrow{+1}$ F

33. (B) As Similarly,

P $\xrightarrow{+1}$ Q F $\xrightarrow{+1}$ G

A $\xrightarrow{+1}$ B A $\xrightarrow{+1}$ B

S $\xrightarrow{+1}$ T I $\xrightarrow{+1}$ J

S $\xrightarrow{+1}$ T L $\xrightarrow{+1}$ M

34. (A) C, E, D, H → H, D, E, C Similarly, V, R, N, P → P, N, R, V

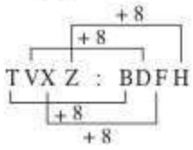
35. (D) As L $\xrightarrow{+4}$ p Similarly, D $\xrightarrow{+4}$ h

K $\xrightarrow{+4}$ o C $\xrightarrow{+4}$ g

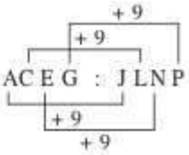
J $\xrightarrow{+4}$ n B $\xrightarrow{+4}$ f

36. (C) DFHJ : LNPR (+8, +8, +8, +8)

Similarly,



37. (C)



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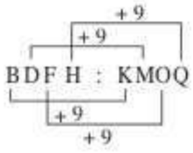
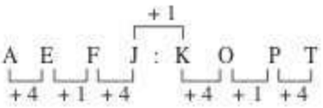


38. (A)



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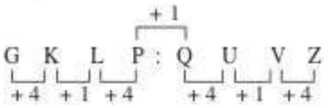
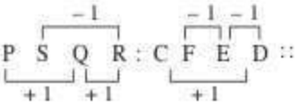


39. (D)



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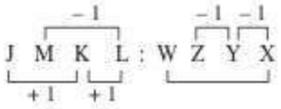


40. (A)

As	Similarly,
$Q \xrightarrow{-4} M$	$Y \xrightarrow{-4} U$
$I \xrightarrow{+4} M$	$A \xrightarrow{+4} E$
$O \xrightarrow{-4} K$	$W \xrightarrow{-4} S$
$K \xrightarrow{+4} O$	$C \xrightarrow{+4} G$

41. (B) First and fourth letters are interchanged while second and third letters are interchanged.

42. (C) As $Z \xrightarrow{-5} R \xrightarrow{+7} Y \xrightarrow{-8} Q$

$J \xrightarrow{-8} B \xrightarrow{+7} I \xrightarrow{-8} A$

Similarly, $P \xrightarrow{+7} R \xrightarrow{+8} O \xrightarrow{+7} L$

$E \xrightarrow{+7} L \xrightarrow{-8} D \xrightarrow{+7} K$

Exercise 4

1. (A) All the cities given in the question are capitals, similarly Shimla is also a capital.
2. (B) As all the terms given in the question are medical terms and Haematology is also medical term.
3. (B) Apple, Grape and Orange all these are fruits.
4. (A) All these are planets.
5. (B) Baseball is like Volleyball, Hockey and Football.
6. (D) All these are used for Broadcast.
7. (C) All these words represent the inhabitants of India.
8. (D) All these are parts of a Vehicle.
9. (A) These all are the languages of computer.
10. (C) These all are defensive games.
11. (B) All are the parts of tree.
12. (D) All these are related to train.
13. (D) As all the terms given in the question are cerials and gram is also one of the cerials.
14. (C) The synonym of arid, parched and droughty is dry.
15. (D) The synonym of Lock, Shut and Fasten is block.
16. (C) As Lungs, Liver and Kidneys are internal part of the body, in the same way 'Heart' is also an internal organ.
17. (B) Carpenter, Plumber, Electrician and Blacksmith come in same category.
18. (A) All the three given words are the qualities of a person.
19. (B) Coal, Iron, Mica all are minerals.
20. (A) Aeroplane, Train and Truck all are means of Transport.
21. (D) All the three given words are Human characteristics.
22. (D) All the three given words are the young one of Animals.
23. (B) Kerosene, Petrol and Diesel all the three are Fuel.
24. (D) All the three given words are Insects.
25. (C) All the three given words are Headgear *i.e.*, safety for head.

Exercise 5

1. (B) As, $25 = (5)^2 \rightarrow (5+1)^2 + 1 = 37$

   Similarly, $49 = (7)^2 \rightarrow (7+1)^2 + 1 = 65$

2. (C) As, $24 : 60 = \frac{2}{5}$

   Similarly, $\frac{120}{300} = \frac{2}{5}$

3. (B)

As	Similarly,
$M \xrightarrow{+2} O$	$H \xrightarrow{+2} J$

and $H \xrightarrow{-2} 11$ and $18 \xrightarrow{-2} 16$

4. (A) In Eq. alphabets positions of K and T are 11 and 20 respectively.

   Similarly, positions of J and R are 10 and 18.

5. (B) $24 \rightarrow 2 \times 4 = 8$

   $32 \rightarrow 3 \times 2 = 6$

6. (B) As, $16 : 56 = \frac{2}{7}$

   Similarly, $11 : 112 : \frac{2}{7}$

7. (C) As position of M and N in Eq. alphabets are 13 and 14 respectively.

8. (B)

9. (A) $(4)^2 + 3 = 19$

   Similarly, $(7)^2 + 3 = 52$

10. (C) $123 \rightarrow 13^2$

    Similarly, $235 \rightarrow 25^3$

    middle digit of first term becomes power to the next term.

11. (B) $27 \rightarrow 3^3, 125 \rightarrow 5^3, 64 \rightarrow 4^3$

    $\therefore$? $= 6^3 = 216$

12. (B) As, $\underbrace{10}_{(10)^2-1} : 99$ Similarly, $\underbrace{9}_{(9)^2-1} : 80$

13. (C) As, $68 = (4)^3 + 4$

    $130 = (5)^3 + 5$

    and $350 = (7)^3 + 7$

    $\therefore$ $? = (6)^3 + 6 = 222$

14. (A) As, $61 = (4)^3 - 3$

    $121 = (5)^3 - 4$

    and $337 = (7)^3 - 6$

    $\therefore$ $? = (6)^3 - 5 = 211$

15. (D) First number = 8 and the sum of the digits of the second number is 2 + 8 *i.e.*, 10. Thus, the difference of the first number and the sum of digits of the second number is 10 – 8 *i.e.*, 2. Similarly, the sum of the digits of third number is 2 + 7 *i.e.*, 9.

    Hence, the sum of digits of fourth number should be 2 more than 9 *i.e.*, 11.

    Hence, 4th number is 65.

16. (C) $3 \xrightarrow[(3)^2+3]{} 12$

    $5 \xrightarrow[(5)^2+5]{} 30$

17. (B) $\underbrace{144}_{\sqrt{144}-2} : 10$ $\underbrace{169}_{\sqrt{169}-2} — 11$

Exercise 6

1. (C) From problem figure I and II at each vertex one black circle is increased.

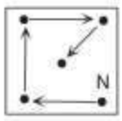
2 (D) From problem figure I and II one same but smaller design is increased inside.

3. (B) From problem figure I to II the design moves through 90° clockwise and the white circle becomes black.

4. (A) From problem figure I to II two vertical lines are increased.

5. (E) From problem figure I to II both the upper designs shift to bottom.

6. (E) From problem figure 1 to 2, designs take change in the following order. In which triangular design rotates through 45° anticlockwise only. While all



   the rest design rotate through 90° clockwise and a new design occurs at the place of N. Applying the same rule, with problem figure 3, the answer figure (E) is obtained.

7. (D) From problem figure 1 to 2, whole coloured leaf rotates through 135° anticlockwise and the outer half coloured leaf rotates through 135° clockwise. While inner half coloured leaf rotates through 45° clockwise. Using the same rule with problem figure 3, the answer figure (D) is obtained.

8. (C) From problem figure 1 to 2, design ' ' rotating through 90° anticlockwise, moves one arm ahead. And design ' ' rotating 90° anticlockwise then reversing moves one arm ahead. Doing the same rule with problem figure 3, the answer figure (C) is obtained.

9. (A) From problem figure 1 to 2, designs move one arm ahead clockwise. In which design '«' rotates through 135° anticlockwise, and the design >, 180° and ' ' 90° and design 'v' rotates through 180°. Applying the same rule with problem figure 3, the answer figure (A) is obtained.

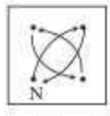
10. (A) From problem figure 1 to 2, the design at the bottom rotating through 90° clockwise situates at right most, and the middle design rotates through 90° anticlockwise situates at the left most and the top most design rotating through 90° anticlockwise situates in the middle. Using the same rule with problem figure 3, the answer figure (A) is obtained.

11. (D) From Pf_1 to Pf_2 the designs are changing their places as shown below :

    Here N indicates the new design.

    The same changes will take place from Pf_3 to Pf_4. Hence the answer is (D).

12. (E) From Pf_1 to Pf_2 the designs are changing their places as shown below :



    The same changes will take place from Pf_3 to Pf_4. Hence the answer is (E).

13. (A) From Pf_1 to Pf_2 the inner diagram comes out after shifting one side anticlockwise while the outer design comes in side after shifting one side

clockwise and then reverses. The same change will take place from Pf_3 to Pf_4.

14. (C) From Pf_1 to Pf_2 each of the both designs shifts one side anticlockwise and then reverses. The same change from Pf_3 to answer figure (C).

15. (B) From Pf_1 to Pf_2 upper right and lower left designs interchange their positions and upper left and lower right also interchange their positions but upper left after reaching to lower right takes a new shape. Besides, the middle above shifts middle down and becomes black from white but the middle down after reaching middle above moves through 90° clockwise. The same change takes place from Pf_3 to Pf_4.

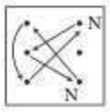
16. (C) From Pf_1 to Pf_2 the design ↑ shifts to second place from the left and the upper part of it reverses. The design ⇑ shifts to third place from the left and then it reverse. The design ⇑ shifts to fourth place and then reverses. The design ⇓ shifts to extreme left and then reverses. The same changes take place from Pf_3 to answer fig. (C).

17. (C) From Pf_1 to Pf_2 upper right design shifts in centre and the lower right to lower left. Central design after shifting to upper left moves through 90° clockwise and the lower left after shifting to upper right moves through 180°. Upper left design after shifting to lower right takes a new shape. The same changes are from Pf_3 to Pf_4.

18. (C) From Pf_1 to Pf_2 both the designs move through 90° clockwise. Besides, the larger design is reduced and vice versa.

19. (E) From Pf_1 to Pf_2 the whole design moves through 45° anticlockwise, but each of all the inner designs shifts one place clockwise. Besides, the design ℄ at the end of one line reverses. The same changes are from Pf_3 to Pf_4.

20. (C) Each of the designs from Pf_1 to Pf_2 moves through 40 anticlockwise and shifting as shown below :



Pf_1 to Pf_2

The same changes take place from Pf_3 to answer figure (C).

21. (B) From Pf_1 to Pf_1 the first and third design from anticlockwise each shifts two and one side respectively anticlockwise while the remain design shifts one side anticlockwise. The same changes are from Pf_3 to Pf_4.

22. (B) The design ⎛ shifts one side clockwise from Pf_1 to Pf_2 and the other design shifts one side clockwise and then moves through 180°.

23. (D) From Pf_1 to Pf_2 the design ⎛ shifts one side clockwise and then reverses. Similarly second design ↩ shifts one side clockwise and then reverses. The same changes are from Pf_3 to Pf_4.

24. (A) From Pf_1 to Pf_2 from the top first, second and third design shift to second, fourth and first places from the top respectively after reversing and the designs at the of top of these also reverse while the fourth design shifts to third place from the top after reversing. The design at this top also reverses.

25. (D) From Pf_1 to Pf_2 the design with arrow moves through 90° anticlockwise while the other design moves through 135° clockwise. Besides, a line in the □ at the end also moves through 90° and the arc at the end of other design reverses.

26. (A) From Pf_1 to Pf_2 the arrow separates from the design and shifts one side anticlockwise and then reverses. The remaining parts reverses at its own place.

27. (A) From Pf_1 to Pf_2 the central design shifts to upper right after moving through 90° clockwise and then it is surrounded by a square. The lower design shifts to centre after moving through 135° anticlockwise and then it reverses. The remaining design moves through 135° anticlockwise and shifts to lower left and a line is added to it in anticlock direction.

28. (E) From Pf_1 to Pf_2 the white leaves moves through 180° while the other leaf moves through 135° anticlockwise.

29. (D) From Pf_1 to Pf_2 the whole design moves through 135° clockwise and the design ↑ is changing into 'Y'.

30. (B) From Pf_1 to Pf_2 the design ⎣ is moving through 135° anticlockwise while the other design moves through 180°. The □ is changing to □ and both the designs at the ends of other design are reversed.

31. (C) From Pf_1 to Pf_2 three lines are added and the curving ends of these lines are anticlockwise.

32. (A) From Pf_1 to Pf_2 ↑ and ↻ are reversed at their own places. T moves through 90° clockwise and S moves through 90° anticlockwise and then reverses.

33. (E) From Pf_1 to Pf_2 the design moves through 90° clockwise and one same design but no design at its end is to its right.

34. (A) From Pf_1 to Pf_2 the whole design moves through 90° anticlockwise and the lines in the Δ disappear but these horizontal lines appear in next Δ. The same change is from Pf_3 to Pf_4.

35. (C) From Pf_1 to Pf_2 the design from upper right shifts lower right and becomes black from white. The design from centre shifts to upper left and reverses about vertical axis, while the design from lower left shifts to centre and moves through 90° clockwise.

36. (A) From Pf_1 to Pf_2 both the designs inter-change their positions and $\cup$ reverses while arrow shift to the line in the same direction.

37. (D) From Pf_1 to Pf_2 both the designs inter-change their positions and the bigger design becomes smaller and vice versa. Besides the bigger design after becoming smaller moves through 90° anticlockwise and reverses.

38. (C) From Pf_1 to Pf_2 the second design from the top shifts to bottom after moving 90° clockwise. The design from the top shifts to top after moving 90° clockwise. The design from shifts to third place from the top after moving through 90° anticlockwise. The design ○ shifts to second place from the top and its half part disappears.

39. (C) From Pf_1 to Pf_2 the design moves through 90° anticlockwise and its black image is placed over it. The same rule is for Pf_3 to Pf_4.

40. (A) From Pf_1 to Pf_2 the outer most design comes down and reverses. The design in the middle goes up after moving through 90° clockwise while the innermost design becomes white from black after moving through 135° anticlockwise.

41. (E) From Pf_1 to Pf_2 the design moves through 90° clockwise and then enclosed in a figure with one less number of side. The same rule is for Pf_3 to Pf_4.

42. (D) From Pf_1 to Pf_2 the directions of all the arrows are reversed. The same rule is for Pf_3 to Pf_4.

43. (E) From Pf_1 to Pf_2 each of the designs shifts one step downwards while the lowermost designs shifts to the top. The designs at the end of each gets reversed. The same rule is for Pf_3 to Pf_4.

44. (C) From Pf_1 to Pf_2 the whole design is laterally inverted. Except for the upper of the line with three arcs and the lower arc of the line with two arcs, all the rest are inverted. The same rule is for Pf_3 to Pf_4.

45. (C) From Pf_1 to Pf_2 both the arcs as well as the other part of the figure get divided into two parts. The same rule is for Pf_3 to Pf_4.

46. (C) From Pf_1 to Pf_2 the whole design moves through 135° anticlockwise and the arrow attached to it, is reversed.

47. (B) From Pf_1 to Pf_2 the horizontal design moves through 135° clockwise and the designs attached to its ends are changed from black to white and vice versa. The vertical design moves through 180° and the designs attached to its ends are reversed.

48. (B) From Pf_1 to Pf_2 the main design moves through 90° clockwise. Its outer part goes inside. The × inside it is changed into + and comes out. The outer triangle shifts one side anticlockwise and after reducing it becomes black. Besides, a new design is added.

49. (A) From Pf_1 to Pf_2 the whole design is inverted. The same rule is for Pf_3 to Pf_4.

50. (C) From Pf_1 to Pf_2 the black remain at their own places but three lines which are attached to dots get inverted and shift to the opposite side. The same rule is for Pf_3 to Pf_4.

51. (C) From Pf_1 to Pf_2 the upper right design after reversing shifts to lower left. The central design shifts to upper right after reversing and the lower left design shifts to centre after one decrease side.

52. (D) From Pf_1 to Pf_2, Δ moves through 90° clockwise. Three in the upper most design shift to bottom along the diagonal and then reverse. The design at the bottom shift to top along diagonal and then moves through 45° anticlockwise. Besides, the black dot shifts one step anticlockwise. The same changes take place from Pf_3 to Pf_4.

53. (E) From Pf_1 to Pf_2 the upper design shifts $\frac{1}{2}$ side clockwise and then moves through 45° clockwise. The lower design shifts 1 side clockwise and then moves through 90° anticlockwise. The same changes take places from Pf_3 to Pf_4.

54. (E) From Pf_1 to Pf_2 each design shifts one step clockwise. Some of them after shifting move through 180° while other through 90° clockwise or anticlockwise. The same changes take place from Pf_3 to Pf_4.

55. (D) From Pf_1 to Pf_2 each of the designs shifts one side anticlockwise. Besides the outer design goes inside and *vice-versa*.

56. (D) From Pf_1 to Pf_2 the main design is replaced by a design with one less number of sides. The black circles inside the figure come out on either sides of the figure and a white circle is added inside it.

57. (D) From Pf_1 to Pf_2 the figure moves through 90° anticlockwise and the arrow is reversed after detaching from it. The remaining part of the figure gets laterally inverted.

58. (D) From Pf_1 to Pf_2 the design from the left shifts to right and then moves through 90° clockwise. The design from the centre shifts to left and takes a new shape while the design from the right shifts to centre and then moves through 90° anticlockwise.

59. (C) From Pf_1 to Pf_2 the whole figure moves through 90° clockwise. One half of one line of arrow is decreased. The design infront of the arrow moves through 45°.

60. (E) From Pf_1 to Pf_2 all the designs get laterally inverted while the uppermost and the lowermost designs interchange their positions.

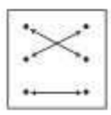
Exercise 7

1. (D) In the original pair of figure the lower most diagram ⊃— of part I shifts in part II to the upper most place and then reverses. But in answer figure (Δ) the lowermost design of I shift to uppermost but does not reverse in part II.

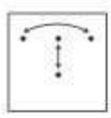
2. (E) In the original pair of figure the designs of part I move through 180° and then reverse at their own

place in part II. In answer figure (E) the designs reverse but also interchange their places.

3. (C) In the I part to II of the original pair of figure the pentagon is moving through 90° anticlockwise and the line in side the pentagon is shfting two sides anticlockwise. But in fig. (C) the line is shifting three sides anticlockwise.
4. (B) In the original pair of figure from I to II the design ⬯ shifts to its next clockwise and then enlarges. In answer figure (B) from I to II the design ⬯ shifts to its next clockwise but does not enlarge.
5. (A) In the original pair of figures from I to II the designs Δ middle of I row shifts to the uppermost position in II row. In answer fig (A) the design □ middle of I row does not shift to the uppermost position in II row.
6. (D) In the original pair of figures from I to II all the three designs are separated and the lowermost design remains in lowermost position. In answer figures (D) the lowermost designs shift uppermost position.
7. (A) In the original pair of figures from I to II both the outer designs interchange their positions while the innermost design takes a new shape.
8. (C) In the original pair of figures from I to II both the designs are joint after reversing.
9. (A) In the original pair of figures from I to II the design after moving through 180°, in the left, the same in the middle and reversing about vertical in the right appears. The same change in fig. (A)
10. (B) In the original pair of figures from I to II the outer lines disappear and a complete closed figure is made.
11. (E) In the original pair of figures from I to II, each design shifts to its next position anticlockwise. Besides, the design ⚲ moves through 90° clockwise while each of the next design moves through 90° anticlockwise.
12. (A) In the original pair of figures from I to II the half left part is added to the right and after it black part changes white and *vice-versa*. The same change is in fig. (A).
13. (B) In the original pair of figures from I to II the design at the left shifts to top and becomes black from white, the design at the centre shifts to left and moves through 90° anticlockwise, the design at the right top shifts to $\frac{1}{2}$ side clockwise and moves through 90°. The remaining design shifts the centre and moves through 90° clockwise.
14. (E) In the original pair of figures from I to II, each of the upper designs moves through 90° clockwise at its own place while each of the lower designs moves through 90° anticlockwise.
15. (E) In the original pair of figures from I to II the design after reversing about horizontal appears at left and the mirror image of the left appears at right. The same change is in fig. (E).
16. (C) In the original pair of figures from I to II the design moves through 180°. The same change is in fig. (C).
17. (D) In the original pair of figures from I to II one of the two designs disappears while remaining one moves through 90° anticlockwise. The same change is in fig. (D).
18. (C) In the original pair of figures from I to II the outermost design becomes innermost, the next to outermost becomes the outermost while the innermost becomes the central design.
19. (E) In the original pair of figures from I to II one side from each design is removed in clockwise direction.
20. (E) In the original pair of figures from I to II both upper designs interchange their positions while the lower left and right designs interchange their positions.
21. (A) In the original pair of figures from I to II the upper part of design moves through 90° clockwise while the lower part moves through 90° clockwise.
22. (A) In the original pair of figures from I to II the designs shift as shown below :



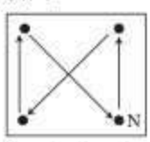
23. (B) In the original pair of figures from I to II the designs shift as shown below :



24. (D) In the original pair of figures from I to II the design becomes shaded from white.
25. (D) In the original pair of figures from I to II one side of the design is reduced.

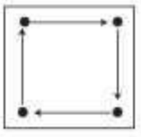
Exercise 8

1. (C) In all the pairs except (C) from I to II the innermost figure becomes the outermost, the outer most figure becomes the middle figure and the middle figures becomes the innermost figure.
2. (C) In all the other pairs except (C) from I to II each arc moves through 90° anticlockwise.
3. (C) In all the pairs except (C) arcs on both the lines are reversed.
4. (E) In all the pairs except (E) and outermost and the central designs interchange while the innermost design takes a new shape.
5. (D) In all the pairs except (D) the right upper design shifts to lower right in the same positions.
6. (C) In all the pairs except (C) the designs from I to II shift as shown below :



Here, N indicates the design in new shape.

7. (C) In all the pairs except (C) both the upper designs interchange their position while the design from the left after reaching to right takes a new shape.
8. (E) In all the pairs except (E) the upper right design shifts to lower right and after this it moves through 135° anticlockwise.
9. (D) In all the pairs except (D) the whole design moves through 90° anticlockwise.
10. (A) In all the other pairs except (A) from I to II each one of the half black squares moves through 90° anticlockwise.
11. (C) In all the pairs except (C) from I to II one of the three designs is replaced by a new one.
12. (E) In all the pairs except (E) from element I to II four lines are decreasing.
13. (A) In all the pairs except (A) the design in II is half the designs in I.
14. (D) In all the pairs except (D) from element I to II the outer design moves through 135° clockwise while the inner design moves through 90° anticlockwise.
15. (A) In all the pairs except (A) from element I to II the outermost design shifts to the middle.
16. (D) In all the pairs except (D) from element I to II each design is moving through 90° anticlockwise.
17. (B) In all the pairs except (B) from element I to II the design is making the mirror image.
18. (C) In all the other pairs except (C) the arc rotates through 45° anticlockwise while the arrowhead shifts from end to the other end.
19. (B) In all the other pairs except (B) from I to II the design moves through 135° clockwise the arrowhead is inverted and the first leaf is shaded.
20. (E) In all the other pairs except (E) from I to II 10 lines out of 16 outer lines are removed.
21. (A) In all the other pairs except (A) from I to II the designs shift as shown below :



The design that reaches upper right position moves through 90° clockwise; the designs that reach upper-left get inverted and the design that reaches the lower left position moves through 90° anticlockwise.

22. (C) In all the pairs except (C) from element I to II the design at the centre is displaced (C) it is not so.
23. (A) In all the pairs except (A) from element I to II the design is further divided in two equal parts.
24. (C) In all the other pairs except (C) from I to II the design at the extreme left shifts to extreme right. All the other designs shift to left and the design that shifts to extreme left gets a new shape.
25. (E) In all the other pairs except (E) from I to II the smaller design moves through 45° clockwise and is enclosed by a figure with one less number of sides.

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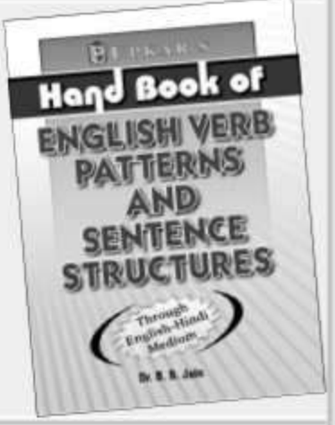

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Classification of Spotting into the Dissimilar

In such type of test you are given a group of certain items. In this group all except one are similar to one another in some manner. The candidate is required to select one item which does not fit into the given group.

For explanation, some examples are given below :

Example 1. Choose the word which is least like the other words in the group.

(A) Mango (B) Apple
(C) Brinjal (D) Grapes
(E) Guava

Answer with Explanation : (C) Here all except brinjal are fruits, while brinjal is a vegetable.

Example 2. Find the pair which is different from other .

(A) Cows and Buffaloes
(B) Cock and Hen
(C) Horse and Mare
(D) Dog and Bitch
(E) Peacock and Peahen

Answer with Explanation : (A) Here all except (A) are female and male in their order, while in (A) first word is female and second one is female.

Example 3. Choose the letters group which is least like the other letters group.

(A) EDCBA (B) XWVUY
(C) JIHGF (D) ONMLK
(E) TSRQP

Answer with Explanation : (B) Here all except (B) are in reverse order of alphabet series.

Example 4. Which one of the following words is different from the rest ?

(A) Cow (B) Horse
(C) She-goat (D) Lion

Answer with Explanation : (D) Except 'Lion' all the rest are vegetarian animals while 'Lion' is a wild Carnivore.

Example 5. Find out the pair which is different from the other given pairs.

(A) Mason—Wall (B) Cobbler—Shoes
(C) Farmer—Crop (D) Tailor—Dyeing

Answer with Explanation : (D) In all the rest, second is made by the first.

Example 6. Find out the number which is different from the rest.

(A) 11 (B) 13
(C) 15 (D) 17

Answer with Explanation : (C) All the rest are prime numbers.

Example 7. Find out the pair which is different from the other given pairs.

(A) 60 : 80 (B) 54 : 72
(C) 36 : 48 (D) 24 : 30

Answer with Explanation : (D) The ratio in all the fairs is 3 : 4 while the ratio in 24 : 30 is $\frac{4}{5}$.

Example 8. Which group of letter is different from the rest ?

(A) PRT (B) MOQ
(C) GEC (D) TLX

Answer with Explanation : (C)

P R T M O Q G E C
+2 +2 +2 +2 −2 −2

T V X S U W
+2 +2 +2 +2

Example 9. Which group of letters is different from the rest ?

(A) LO (B) MN
(C) GT (D) FV

Answer with Explanation : (D)

LO → 12 + 15 = 27
(Numerical value of letters)
MN → 13 + 14 = 27
GT = 7 + 20 = 27
FV = 6 + 22 = 28

Example 10. Find the odd number.

(A) 144 (B) 81
(C) 125 (D) 324

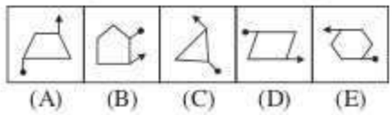
Answer with Explanation : (C) All the rest numbers are perfect square.

Example 11. Find the odd word.

(A) Animal (B) Man
(C) Worm (D) Hammer

Answer with Explanation : (D) All the rest are living things while hammer is non-living.

Example 12. Out of the given figures, four are similar in a certain way. One figure is not like the other four figures. That means four figures form a certain group which are of the figures does not belong to this group.



Answer with Explanation : (B) All the figures consist of a central figure and two additional line. One having an arrowed and other having a dot. The angle

between these two lines is always 180°, *i.e.*, these two additional lines are exactly the opposite direction. Figure B is the odd figure because here this rule is violated.

Exercise 1

Directions—In each of the following questions find the word which is different from the rest.

1. (A) Madam (B) Eye (C) Hand (D) Malyanam
2. (A) Charity (B) Kindness (C) Revenge (D) Love
3. (A) Radish (B) Carrot (C) Potato (D) Cabbage
4. (A) USUAL (B) USAGE (C) URINE (D) UKASE
5. (A) Steel (B) Brass (C) Copper (D) Mercury
6. (A) Analysis (B) Search (C) Investigation (D) Conclusion
7. (A) Spinach (B) Turmeric (C) Cumin (D) Coriander
8. (A) Rose (B) Lily (C) Marigold (D) Cactus
9. (A) Window (B) Wall (C) Building (D) Door
10. (A) Tiger (B) Lion (C) Leopard (D) Cow
11. (A) Lemon (B) Orange (C) Apple (D) Grape fruit
12. (A) Boxing (B) Wrestling (C) Karate (D) Long Jump
13. (A) Black (B) Red (C) Yellow (D) Blue
14. (A) Door (B) Concrete (C) Roof (D) Wall
15. (A) Volleyball (B) Hockey (C) Cricket (D) Chess
16. (A) Dagger (B) Knife (C) Sword (D) Shield
17. (A) Simla (B) Nilgiri (C) Ooty (D) Nainital
18. (A) Trumpet (B) Roar (C) Shout (D) Grunt
19. (A) Arm (B) Foot (C) Nose (D) Ear
20. (A) Metre (B) Yard (C) Mile (D) Acre
21. (A) Gold (B) Clay (C) Diamond (D) Rubber
22. (A) Troop (B) Group (C) Mob (D) Class
23. (A) Tomato (B) Potato (C) Carrot (D) Onion
24. (A) Lion (B) Tiger (C) Jackal (D) Monkey
25. (A) Talk (B) Smell (C) Think (D) Feel
26. (A) Maple (B) Apple (C) Beet (D) Sugarcane
27. (A) Rose (B) Marigold (C) Lotus (D) Hibiscus
28. (A) Saturn (B) Venus (C) Sun (D) Mars
29. (A) Paper (B) Pencil (C) Pen (D) High lighter
30. (A) Bench (B) Chair (C) Wood (D) Safe
31. (A) Boat (B) Bus (C) Train (D) Wheel
32. (A) Cricket (B) Badminton (C) Tennis (D) Hockey
33. (A) Bhopal (B) Chandigarh (C) Patna (D) Allahabad
34. (A) Square (B) Rectangle (C) Triangle (D) Rhombus
35. (A) Pen (B) Pencil (C) Brush (D) Ink

Exercise 2

Directions—Find out the pair which is different from the others in each of the following questions.

1. (A) Reward : Punishment
   (B) Object : Permit
   (C) Sharp : Blunt
   (D) Cold : Cool
2. (A) 52, 68 (B) 64, 80 (C) 63, 77 (D) 50, 66
3. (A) Air and Oxygen (B) Flower and Petal (C) Cloth and Thread (D) Shirt and Tie
4. (A) School & Students
   (B) Court and Advocates
   (C) Standing Spectators
   (D) Road and Pedestrians
5. (A) Paper—White (B) Sky—Blue (C) Cassette—Song (D) Leaf—Green
6. Which of the following does not have the same relationship between them as is there between DH : EG ?
   (A) QT : RS (B) LP : MO (C) BG : CF (D) VZ : XY

7. Which one of the pair is different from the rest ?
   (A) PARENT : RPBJEO
   (B) MOSTLY : SMPYTM
   (C) MOTHER : TMPRHD
   (D) SUNDAY : NSVYDB

8. Which one of the following does not have the same relationship between them as is there between MATURELY : 72415863 ?
   (A) RAMTE : 52748
   (B) EMUTRA : 671452
   (C) MARUTA : 785142
   (D) LETRA : 68452

9. (A) 36–5 (B) 28–4
   (C) 77–11 (D) 91–13

10. (A) Hard–Soft (B) Pointed–Blunt
    (C) Long–High (D) Sweet–Sour

11. (A) 11–20 (B) 26–34
    (C) 46–37 (D) 67–76

12. (A) 25–55 (B) 36–44
    (C) 33–48 (D) 19–61

13. (A) Foot–Hand (D) Eye-Nose
    (C) Body–Head (D) Wrist–Finger

14. (A) Water–Stream (B) Energy–Food
    (C) Bulb–Light (D) Sun–Light

15. (A) Death–Disease (B) Milk–Butter
    (C) Grape–Brandy (D) Water-Oxygen

16. (A) Stamp : Letter (B) Ticket–Train
    (C) Car-Engine (D) Ink-Pen

17. (A) Shirt–Dress (B) Boy–Girl
    (C) Mango–Fruit (D) Table–Furniture

18. (A) 16–26 (B) 03–04
    (C) 26–24 (D) 27–22

19. (A) 22, 4, 5 (B) 34, 4, 8
    (C) 37, 4, 9 (D) 54, 4, 13

20. (A) 3–4 (B) 4–7
    (C) 5–12 (D) 20–21

21. (A) Army–General (B) Ship-Captain
    (C) Bus–Driver (D) College–Principal

22. (A) Petrol–Car (B) Ink–Pen
    (C) Garbage–Dustbin (D) Lead–Pencil

23. (A) Industry–Labourers
    (B) Hospital–Patients
    (C) Disease–Insects
    (D) Market–Buyers

24. (A) Book–Page (B) Table–Drawer
    (C) Car–Wheel (D) Loom–Cloth

25. (A) Man–House (B) Bird–Nest
    (C) Lion–Forest (D) Horse–Stable

Exercise 3

Directions—In each of the following questions find out the group of letters which is different from the others.

1. (A) BFIK (B) DHKM
   (C) MQTV (D) PRVX

2. (A) UAVBWC (B) CHIDJE
   (C) XLYMZN (D) PEQFRG

3. (A) DCFG (B) FEHI
   (C) JILM (D) HGIK

4. (A) UQMJ (B) ZVRN
   (C) SOKG (D) TPLH

5. (A) OCKN (B) WRIL
   (C) NPOS (D) ORNK

6. (A) FGBC (B) IJOP
   (C) LMHI (D) ACEG

7. (A) ADHL (B) ILPT
   (C) QSTX (D) FIMQ

8. (A) AZ (B) DU
   (C) EV (D) GT

9. (A) YCDZA (B) LPMQN
   (C) BFCGD (D) NROSP

10. (A) ANBP (B) CPDQ
    (C) FSGT (D) IVJW

11. (A) AFL (B) DIN
    (C) EJP (D) MRX

12. (A) CHM (B) FKP
    (C) EIN (D) NSX

13. (A) DFGH (B) KMNO
    (C) ABCD (D) RTUV

14. (A) EGJK (B) PQST
    (C) IKNO (D) MORS

15. (A) CHG (B) LMM
    (C) BBC (D) HEG

16. (A) BED (B) LOT
    (C) OUT (D) RAT

17. (A) WU (B) QN
    (C) MK (D) GE

18. (A) UW (B) MP
    (C) KN (D) DG

19. (A) GJM (B) EIL
    (C) VXB (D) PSV

20. (A) EIK (B) NQT
    (C) KIO (D) RVX

21. (A) CEAR (B) TEAR
    (C) FEAR (D) WEAR
    (E) BEAR

22. (A) BHE (B) DJG
    (C) SYT (D) JPM
    (E) PUS

23. (A) JOT (B) FED
(C) DIN (D) DOG
(E) OUT

24. (A) DIGH (B) AFED
(C) EJHI (D) JOMH
(E) PUST

25. (A) ABEG (B) PQTV
(C) XYBD (D) JKMO
(E) MNQS

Exercise 4

Directions—Choose the number which is different from the rest in each of the following questions.

1. (A) 2 (B) 126
(C) 215 (D) 9
(E) 65

2. (A) 5 $ 7 (B) 3 ★ 5
(C) 4 % 6 (D) 2 # 4
(E) 9 @ 7

3. (A) 27 (B) 64
(C) 125 (D) 144

4. (A) 65 (B) 145
(C) 37 (D) 197
(E) 323

5. (A) 3456 (B) 6352
(C) 4536 (D) 6354

6. (A) 5379 (B) 1837
(C) 1593 (D) 3179

7. (A) 125 (B) 216
(C) 729 (D) 525

8. (A) 65 (B) 81
(C) 53 (D) 43

9. (A) 63 (B) 13
(C) 43 (D) 23

10. (A) 65 (B) 90
(C) 94 (D) 85

11. (A) 13225 (B) 13339
(C) 13452 (D) 13565
(E) 12229

12. (A) 13791 (B) 13678
(C) 13339 (D) 13564
(E) 13452

13. (A) 376821 (B) 318951
(C) 372164 (D) 319446
(E) 387315

14. (A) 30 (B) 27
(C) 58 (D) 66
(E) 30

15. (A) 248 (B) 326
(C) 414 (D) 392
(E) 818

16. (A) 9611 (B) 1754
(C) 7324 (D) 2690
(E) 5310

17. (A) 8757 (B) 5467
(C) 8632 (D) 7542
(E) 8642

18. (A) 215 (B) 126
(C) 65 (D) 28
(E) 9

19. (A) 636 (B) 878
(C) 404 (D) 514
(E) 757

20. (A) 3055 (B) 5404
(C) 2704 (D) 7105
(E) 6033

21. (A) 8543 (B) 7321
(C) 5623 (D) 8451
(E) 7863

22. (A) 2534 (B) 4316
(C) 3634 (D) 3128
(E) 1742

23. (A) 4313 (B) 6729
(C) 5223 (D) 8955
(E) 3217

24. (A) 6240 (B) 3534
(C) 7358 (D) 1985
(E) 4220

25. (A) 5316 (B) 7433
(C) 4117 (D) 8260
(E) 9180

Exercise 5

1. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Iron (B) Silver
(C) Copper (D) Mercury
(E) Aluminium

2. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Tree (B) Plant
(C) Shrub (D) Creeper
(E) Farm

3. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Sharpener (B) Calculator
(C) Eraser (D) Pencil
(E) Stapler

4. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Sand (B) Stone
(C) Cement (D) Brick
(E) Wall

5. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to the group ?
(A) Silver (B) Gold
(C) Nickel (D) Copper
(E) Brass

6. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Saucer (B) Mug
(C) Pitcher (D) Jar
(E) Jug

7. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Van (B) Truck
(C) Cargo (D) Trolley
(E) Tempo

8. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Mica (B) Zinc
(C) Iron (D) Chlorine
(E) Aluminium

9. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Coriander (B) Mustard
(C) Cumin (D) Clove
(E) Cardamom

10. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Physiology (B) Cardiology
(C) Pathology (D) Radiology
(E) Gastroentrology

11. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Coconut (B) Lotus
(C) Lilly (D) Rose
(E) Marigold

12. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Jug (B) Cup
(C) Mug (D) Pitcher
(E) Container

13. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Dog (B) Horse
(C) Wolf (D) Jackal
(E) Cat

14. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Shampoo (B) Talcum Powder
(C) Hair Oil (D) Cosmetics
(E) Soap

15. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Leaf (B) Flower
(C) Branch (D) Pollen
(E) Root

16. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Jasmine (B) Rose
(C) Dahlia (D) Marigold
(E) Lotus

17. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) 13 (B) 17
(C) 19 (D) 27
(E) 29

18. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Wheat (B) Cabbage
(C) Food (D) Brinjal
(E) Rice

19. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) OMQ (B) HFJ
(C) TPR (D) TRV
(E) VTX

20. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Hut (B) Building
(C) Tent (D) Mansion
(E) Cave

21. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Water (B) Tree
(C) Air (D) Fruit
(E) Acid

22. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?
(A) Apple (B) Orange
(C) Papaya (D) Rose
(E) Guava

23. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?

(A) Dog (B) Cat

(C) Horse (D) Buffalo

(E) Zebra

24. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?

(A) Wheel (B) Tyre

(C) Car (D) Door

(E) Gear

Exercise 6

Directions—(Q. 1–50) In each of the following questions there are five figures (A), (B), (C), (D) and (E). Out of these five figures four are similar in a certain way. However, one figure is not like the other four. Choose the figure which is different from the rest.

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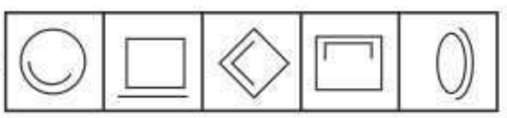
2. 
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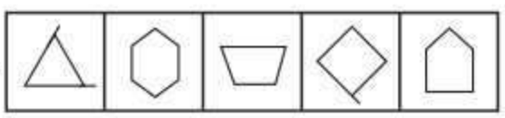
3. 
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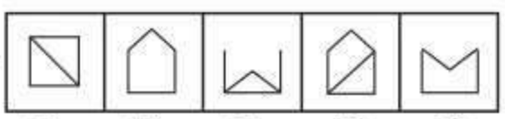
4. 
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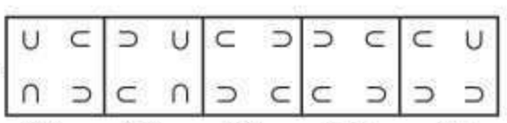
5. 
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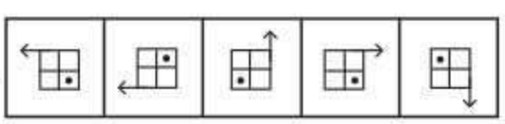
6. 
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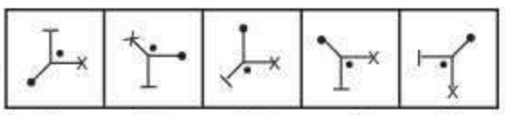
7. 
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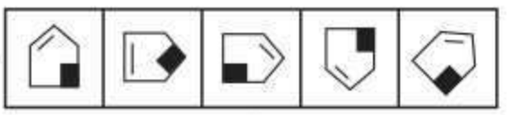
8. 
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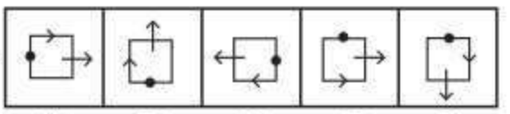
9. 
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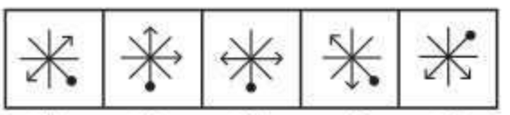
10. 
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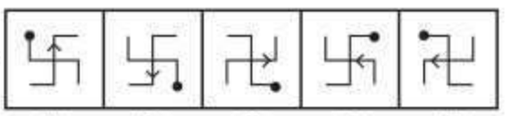
11. 
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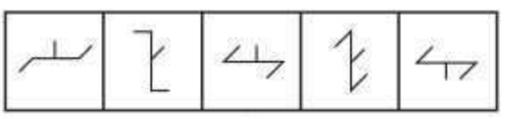
12. 
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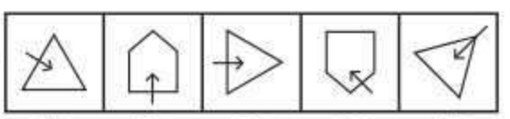
13. 
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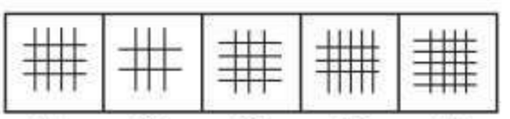
14. 
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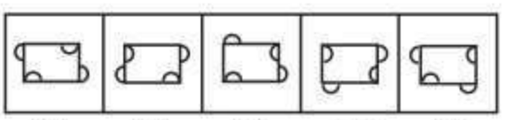
15. 
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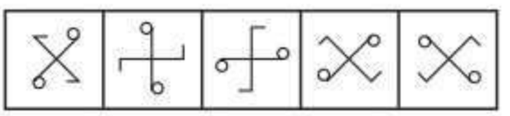
16. 
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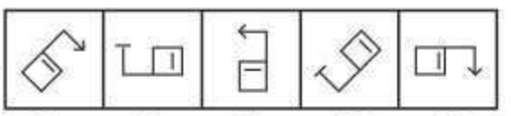
17. 
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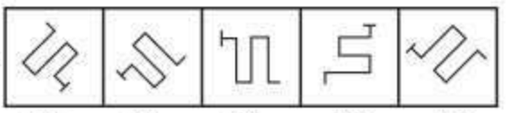
18. 
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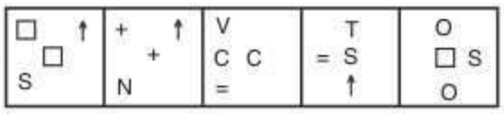
19. 
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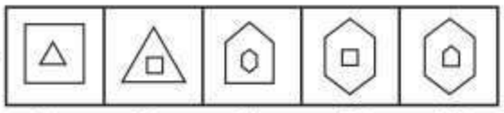
20. 
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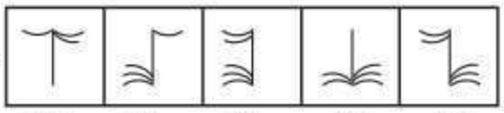
21. 
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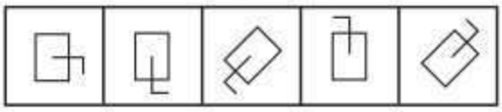
22. 
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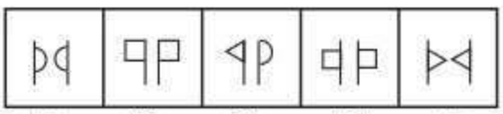
23. 
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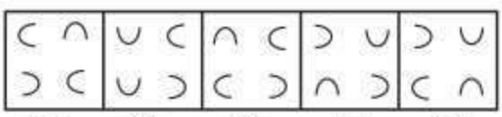
25. 
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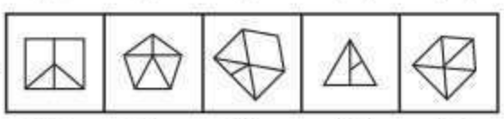
26. 
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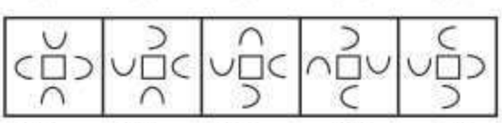
27. 
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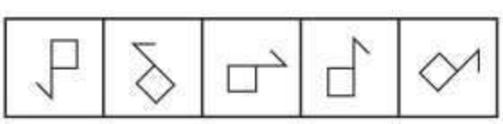
28. 
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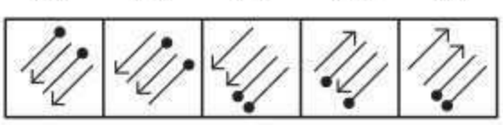
29. 
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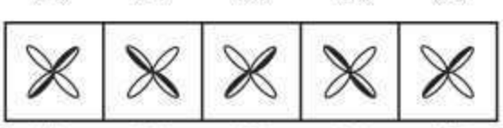
30. 
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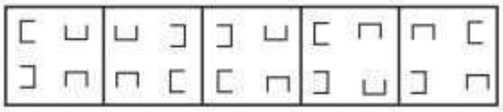
31. 
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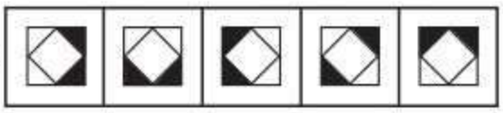
32. 
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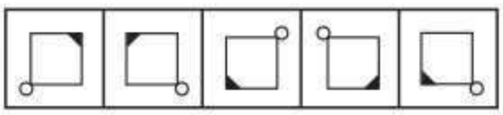
33. 
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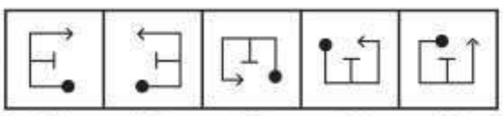
34. 
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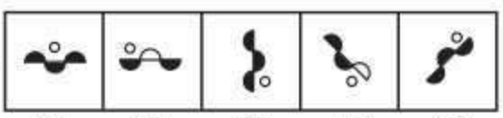
35. 
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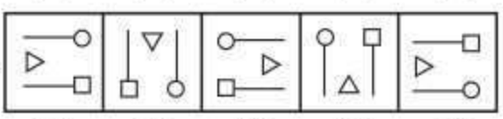
36. 
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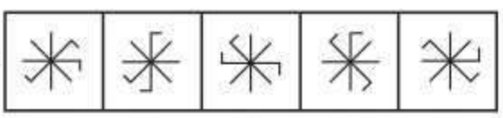
37. 
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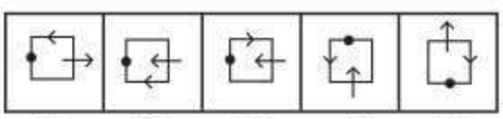
38. 
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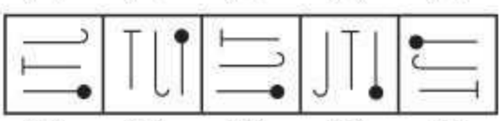
39. 
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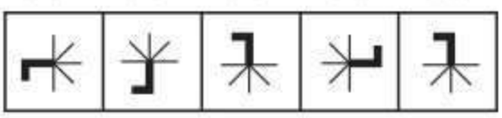
40. 
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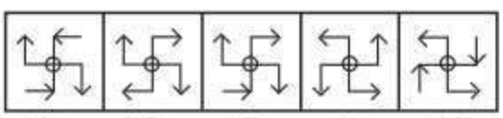
41. 
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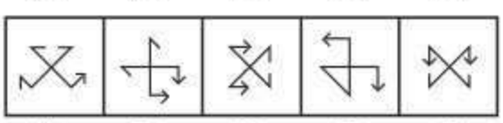
42. 
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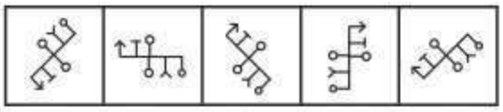
43. 
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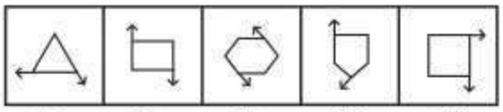
44. 
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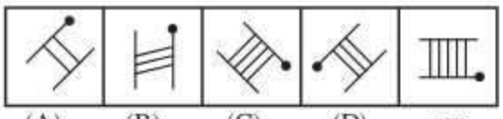
45. 
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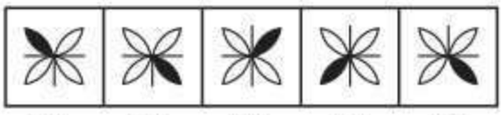
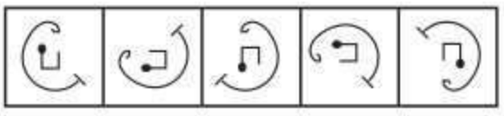
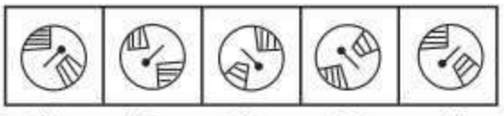
46. 
(A) (B) (C) (D) (E)

47. 
(A) (B) (C) (D) (E)

48. 
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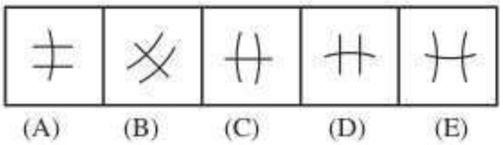
49. 
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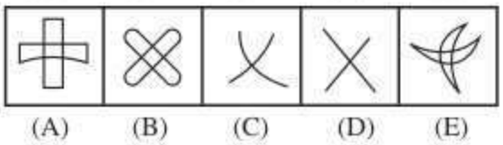
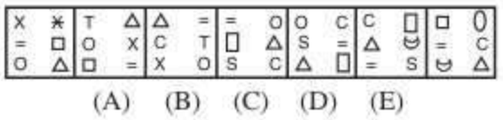
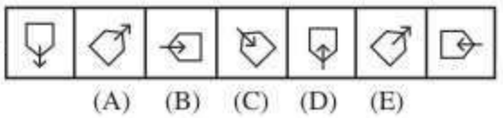
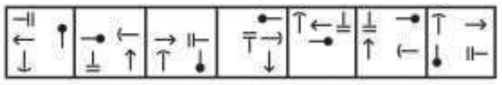
50. 
(A) (B) (C) (D) (E)

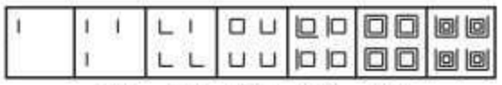
Exercise 7

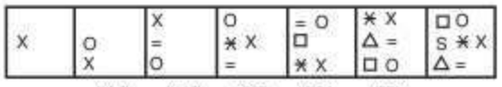
Directions—(Q. 1–25) In each of the following questions, series begins with unlettered figure on the extreme left. One and only one of the five lettered figures in the series **does not** fit into the series. The two unlettered figures one each on the extreme left and the extreme right fit into the series. You have to take as many aspects into account as possible of the figures in the series and find out the one and only one of the five lettered figures which **does not** fit into the series. The letter of that figure is the answer.

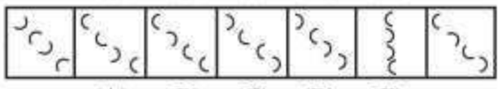
1. 
(A) (B) (C) (D) (E)

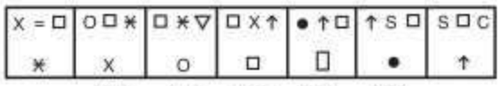
2. 
(A) (B) (C) (D) (E)

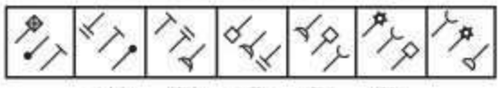
3. 
(A) (B) (C) (D) (E)

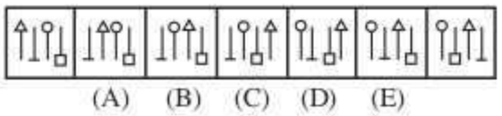
4. 
(A) (B) (C) (D) (E)

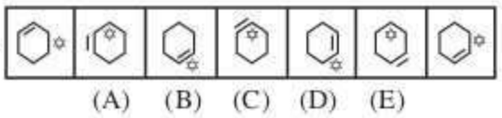
5. 
(A) (B) (C) (D) (E)

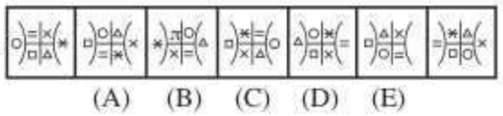
6. 
(A) (B) (C) (D) (E)

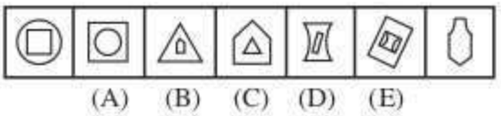
7. 
(A) (B) (C) (D) (E)

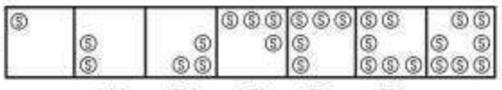
8. 
(A) (B) (C) (D) (E)

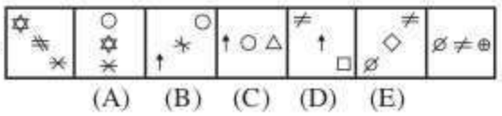
9. 
(A) (B) (C) (D) (E)

10. 
(A) (B) (C) (D) (E)

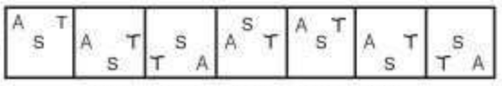
11. 
(A) (B) (C) (D) (E)

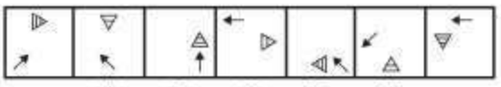
12. 
(A) (B) (C) (D) (E)

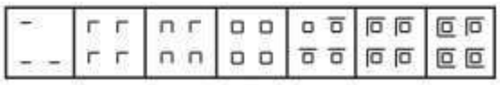
13. 
(A) (B) (C) (D) (E)

14. 
(A) (B) (C) (D) (E)

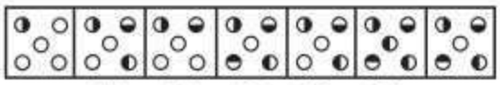
15.
(A) (B) (C) (D) (E)

16. 
(A) (B) (C) (D) (E)

17. 
(A) (B) (C) (D) (E)

18. 

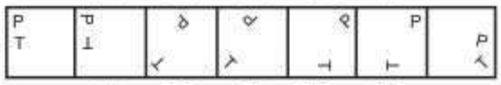
(A) (B) (C) (D) (E)

19. 

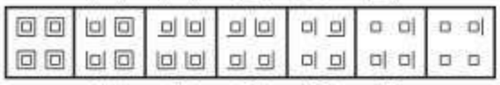
(A) (B) (C) (D) (E)

20.

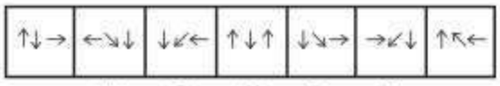
(A) (B) (C) (D) (E)

21. 

(A) (B) (C) (D) (E)

22. 

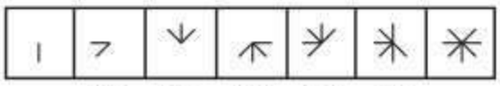
(A) (B) (C) (D) (E)

23. 

(A) (B) (C) (D) (E)

24.

(A) (B) (C) (D) (E)

25. 

(A) (B) (C) (D) (E)

Answers with Explanations

Exercise 1

1. (D) All the rest are related to human beings.
2. (C) All the rest are synonym to each other.
3. (D) All the rest grow underground.
4. (A) In all the rest no letter is repeated.
5. (D) All the rest are solid while Mercury is liquid.
6. (D) Conclusion is the final stage of analysis, search and investigation.
7. (B) Turmeric is a underground stem.
8. (D) Except Cactus, all others are beautiful flowers.
9. (C) All the others are parts of building.
10. (D) All the others are wild Carnivores.
11. (C) All the others are citrus fruits.
12. (D) In all the others one person fights with the other.
13. (A) All the others are primary colours.
14. (B) All the rest are parts of building.
15. (D) All the rest are outdoor games while Chess is an indoor game.
16. (D) All the rest are weapons.
17. (B) All the rest are Hill Stations.
18. (A) All the rest are voices while Trumpet is a musical instrument.
19. (B) All the rest are upper parts of the body.
20. (D) All the rest are units of length while acre is a unit of area.
21. (D) Only rubber is a plant.
22. (D) All the rest are similar in meaning.
23. (A) All the rest grow underground.
24. (D) All the rest are wild Carnivores.
25. (C) All the rest are related to sensory organs.
26. (B) All the rest are used to make sugar.
27. (D) All the rest are sweet smelling flowers while Hibiscus is a plant on bush with large brightly coloured flowers.
28. (C) All the rest are Planets.
29. (A) All the rest are writing materials.
30. (C) All the rest are furniture.
31. (D) All the rest are Vehicles.
32. (B) In all the rest ball is used while in Badminton shuttle lock is used.
33. (D) All the rest are Capitals.
34. (C) All the rest are made of Four sides.
35. (D) Only Ink is liquid.

Exercise 2

1. (D) Cold and Cool are relative synonyms while in all other pairs two words are opposite to each other.
2. (C) In all the other pair, the difference between the two numbers is 16.
3. (D) In all the others second word is a part of the first word while shirt and tie are two different Apparels.
4. (C) In all the others first is work place of the second.
5. (C) In all the other second is the colour of the first.
6. (D) DH : EG (+1, −1) QT : RS (+1, −1) LP : MO (+1, −1) BG : CF (+1, −1)

   but VZ : XY (+2, −1)
7. (C)

   P → R, A → P (+1), R → B

   M → S, O → M (+1), S → P

   M → T, O → M (+1), T → P

   S → N, U → S (+1), N → V
8. (B) M = 7, A = 2, T = 4, U = 1, R = 5, E = 8, L = 6, Y = 3

   ∴ RAMTE = 5274

   EMUTRA ≠ 671452

   MARUTA = 785142

   LETRA = 68452
9. (A) In all the rest first number is 7 times the second number.

10. (C) In all the other pairs of words the two words are opposite to each other.
11. (B) In all the other pairs, there is a difference of 9 between the two numbers.
12. (D) All the others are pairs of composite digits.
13. (A) In all the other pairs, one part is found to second.
14. (B) In all the other pairs, second is produced by first.
15. (A) In all the other pairs, second is made from the first.
16. (C) In all the rest, first is essential to use the second.
17. (B) In all the other pairs, second is the class to which first belongs.
18. (A) In all the other pairs first digits of the pair, are same.
19. (C) In all other pairs,
    $22 = 4 \times 5 + 2$, $34 = 4 \times 8 + 2$,
    $54 = 4 \times 13 + 2$ but $37 \neq 4 \times 9 + 2$
20. (D) In all the other pairs one of the number is prime.
21. (C) As driver drives a bus, such operations are not done in other pairs.
22. (C) In all the rest, first is required by the second for its functioning.
23. (C) In all the other pairs, second is found in first.
24. (D) In all the other pairs second is a part of the first.
25. (C) In all the other pairs second is the living place of the first.

Exercise 3

1. (D) B F I K D H K M M Q T V
   (+4 +3 +2) (+4 +3 +2) (+4 +3 +2)
   P R V X
   (+2 +4 +2)
2. (B) U A V B W C C H I D J E X L Y M Z N
   (+1 +1) (−4 +1) (+1 +1)
   P E Q F R G
   (+1 +1) (+1 +1)
3. (D) F E H I J I L M H G I K
   (−1 +3 +1) (−1 +3 +1) (−1 +2 +2)
4. (A) U Q M J Z V R N S O K G
   (−4 −4 −3) (−4 −4 −4) (−4 −4 −4)
   T P L H
   (−4 −4 −4)
5. (B) In all the others ON is common.
6. (D) F G B C I J O P L M
   (+1) (+1) (+1) (+1) (+1)
   H I A C E G
   (+1) (+2) (+2)
7. (C) A D H L I L P T Q S T X
   (+3 +4 +4) (+3 +4 +4) (−2 +1 +4)
   F I M Q
   (+3 +4 +4)
8. (B) A Z , D U , E V , G T
   (+1 −1) (+4 −5) (+5 −5) (+6 +6)
9. (A) L P M Q N B F C G D N R O S P
   (+4 +4) (+4 +4) (+4 +4) (+4 +4)
   But Y C D Z A
   (+4 −4)
10. (A) A N B P C P D Q F S G T I V J W
    (+1) (+1) (+1) (+1)
11. (B) A F L D I N E J P M R X
    (+5 +6) (+5 +5) (+5 +6) (+5 +6)
12. (C) C H M F K P E I N N S X
    (+5 +5) (+5 +5) (+5 +5) (+5 +5)
13. (C) D F G H K M N O A B C D
    (+2 +1 +1) (+2 +1 +1) (+1 +1 +1)
    R T U V
    (+2 +1 +1)
14. (B) E G J K P Q S T I K N O M O R S
    (+2 +1 +1 +1 +2 +1 +2 +1)
15. (D) Only this alternative contains a vowel.
16. (C) Only this alternative contains two vowels.
17. (B) W U Q N M K G E
    (−2 −3 −2 −2)
18. (A) U W M P K N D G
    (+2 +3 +3 +3)
19. (B) In all the other alternatives, there is no vowel.
20. (C) E I K N Q T K I O R V X
    (+6 +6 +4 +6)
21. (A) All the other groups are meaningful.
22. (E) B H E D J G S Y V J P M P U S
    (+6 −3) (+6 −3) (+6 −3) (+6 −3) (+5 −2)
23. (E) This is only the group which contains two vowels.
24. (D) In all the other groups last three letters are the three consecutive letters of alphabet.
25. (D) In all the other groups two letters of alphabets are missing between second and third letters.

Exercise 4

1. (A) All the rest are composite numbers while 2 is a prime number.
2. (E) In all the rest first digits is less than the third digit by 2 while in 9 @ 7 it is more than the third digit by 2.
3. (D) All the rest are perfect cubes while 144 is not a perfect cube.
4. (E) All the rest are one more than perfect square
   $65 = (8)^2 + 1$, $145 = (12)^2 + 1$
   $37 = (6)^2 + 1$ $197 = (14)^2 + 1$
   But $323 = (18)^2 - 1$

5. (B) $3456 \rightarrow 3+4+5+6=18$
$4536 \rightarrow 4+5+3+6=18$
$6354 \rightarrow 6+3+5+4=18$
but $6352 \rightarrow 6+3+5+2=16$
6. (B) This is only alternative containing an even digit.
7. (D) All the other numbers are perfect cubes.
8. (B) Only 81 is a perfect square.
9. (A) All the rest are prime numbers.
10. (B) $65 = 5 \times 13$, $90 = 2 \times 3 \times 3 \times 5$
$94 = 2 \times 47$, $85 = 5 \times 17$
Factors of 90 are 3 prime numbers while other numbers have only two prime factors.
11. (C) Only in 13452, all the digits used are 1, 2, 3, 4 and 5 which are consecutive digits.
12. (D) $13 \times 7 = 91$, $13 \times 6 = 78$
$13 \times 3 = 39$, $13 \times 5 \neq 64$
and $13 \times 4 = 52$
13. (C) Sum of digits in each other number is 27.
14. (B) No other number is a perfect cube.
15. (D) In all the numbers, the third digit is the product of first two digits.
16. (A) In no other number any digit is repeated.
17. (B) In all the other numbers the digits are in descending order.
18. (A) $(6)^3 + 1 \neq 215$, $(5)^3 + 1 = 126$, $(4)^3 + 1 = 65$, $(3)^3 + 1 = 28$, $(2)^3 + 1 = 9$
19. (D) In all the all other numbers, first and third digits are same.
20. (E) In all the other numbers the sum of all the digits is 13.
21. (B) $(8+5)-(4+3)=6$, $(7+3)-(2+1)=7$
$(5+6)-(2+3)=6$, $(8+4)-(5+1)=6$
and $(7+8)-(6+3)=6$
22. (C) 2 5 3 4 4 3 1 6 3 6 3 4 3 1 2 8
and 1 7 4 2
23. (E) $(4)^2 - 3 = 13$, $(6)^2 - 7 = 29$
$(5)^2 - 2 = 23$, $(8)^2 - 9 = 55$
$(3)^2 - 2 \neq 17$
24. (D) $(6)^2 + (2)^2 = 40$, $(3)^2 + (5)^2 = 34$,
$(7)^2 + (3)^2 = 58$, $(1)^2 + (9)^2 \neq 85$
and $(4)^2 + (2)^2 = 20$
25. (C) $(5)^2 - (3)^2 = 16$, $(7)^2 - (4)^2 = 33$,
$(4)^2 - (1)^2 \neq 17$ $(8)^2 - (2)^2 = 60$
and $(9)^2 - (1)^2 = 80$

Exercise 5

1. (D) All the rest are solid metals while 'Mercury' is liquid.
2. (E) All the rest are plants while 'Farm' is a place.
3. (B) All the rest are stationery.
4. (E) All the rest are material for making a wall.
5. (E) All the rest are metals while brass is an alloy.
6. (A) In all the rest are liquid may be filled.
7. (C) All the rest are vehicles while cargo is 'goods'.
8. (D) All the rest are solid.
9. (B) All the rest are spices while mustard is an oil seed.
10. (D) All the rest are to know the activity of the body parts.
11. (A) All the rest are flowers.
12. (E) All the rest are different forms of container.
13. (B) All the rest are nonveg.
14. (D) All the rest are kinds of 'cosmetics'.
15. (D) All the rest are the parts of tree.
16. (E) Only lotus is grown in mud.
17. (D) All the rest are prime numbers.
18. (C) All the rest come under 'Food'.
19. (C) O M Q H F J T P R T R V V T X
−2+4 −2+4 −4+2 −2+4 −2+4
20. (E) All the rest are living place of 'Men'.
21. (E) All the rest are natural.
22. (D) All the rest are fruits while 'Rose' is a flower.
23. (D) None of rest has horns.
24. (C) All the rest are parts of Car.

Exercise 6

1. (D) In all the other figures there is a triangle.
2. (B) In all the other figures half part of whole diagram is either inside or outside.
3. (C) In all the other figures the uppermost part is angular.
4. (D) In all the rest figures there are only five lines.
5. (E) Only in (E) two arcs in the lower line are in the same directions.
6. (D) In all the rest figures the arrow and the black are in opposite squares.
7. (B) In all the rest figures the ● is between × and T.
8. (B) In all the rest figures except (B) one end of the inner line is at vertex and black square is at one end of the base of the pentagon.
9. (D) In all the rest figures → and ● are opposite to each other.
10. (D) In all the rest figures there is atleast one line between → and —●
11. (D) In all the other figures → and ● are in the same direction.
12. (D) In all the other figures the line at the middle is not parallel to the lines at the ends.
13. (E) In all the other figures the arrow is perpendicular bisector of a line, and is facing to the opposite vertex.
14. (D) In all the other figures the difference in number of horizontal lines and vertical line is one.

15. (A) In all the figures except (A) two semicircles are in the same direction.
16. (B) In all the rest figures except (B) the directions of the dases at the end of line is always towards the circles at the ends of other line.
17. (C) The diagram in figure (A) is same as in figure (E) and the diagram in (B) is same as in figure (D). But the diagram (C) is different from all these.
18. (E) All the figures can be obtained from figure (A) except figure (E).
19. (D) In all the figures except (D) there are two similar designs.
20. (D) The difference in the number of sides of inner and outer diagram is always one except in figure (D).
21. (C) In all the figures except (C) there are arcs on both the sides of the st-line.
22. (A) In all the figures except (A) the direction of the outer line is anticlockwise.
23. (C) In all the other figures except (C), one design is the mirror image of the other.
24. (A) In all the other figures except (A) the black triangles are not at opposite vertices.
25. (E) In all the other figures except (E) the direction of two semicircle is same.
26. (D) In all the other figures except (D) there are as many sides in the outer figure as many in side the figure.
27. (E) In all the other figures except (E) there are two pairs of two semicircle outside the □ and the direction of there semicircles in each pair is opposite to each other.
28. (C) The direction of all the figures except (C) is clockwise.
29. (D) In all the other figures except (D) the directions of the arrows are same.
30. (E) In all the other figures except (E) the black parts are in different directions.
31. (E) In all the other figures except (E) there are two pairs of the designs and in each pair these designs are in opposite direction.
32. (D) In all the other figures except (D) the black portions are not in opposite vertices.
33. (D) In all the other figures except (D) the design O is opposite to black part.
34. (A) In all the other figures except (A) the direction of arrows is anticlockwise.
35. (D) In all the other figures except (D) white small circle is above any black semicircle but in (D) it is above white semicircle.
36. (C) In all the other figures except (C) the vertex of the triangle is towards the other designs.
37. (E) The direction of all the other figure except (E) is clockwise.
38. (B) In all the other figures except (B) the directions of both the arrows are opposite to each other.
39. (B) In all the figures except (B) the direction of T is opposite to each of the other two designs.
40. (B) In all the other figures except (B) the direction is anticlockwise.
41. (C) In all the other figures except (C) the directions of both the arrows on the same are opposite to each other.
42. (E) In all the other figures except (E) the arrow and the dash at the ends of a line are in the same direction.
43. (A) In all the other figures except (A) the direction of the arrow is clockwise.
44. (C) In all the other figures except (C) the directions of the both arrows are clockwise.
45. (B) In all the other figures except (B) the central lines are perpendicular to outer lines but in (B) it is not so.
46. (B) In all the other figures except (B) there is no line between the white and black.
47. (C) In all the other figures the dot of is towards the curve part C of the outer diagram but in (C) it is towards ↖ of the outer diagram.
48. (A) In all the other figures except (A) there are three small lines in the triangular figure. But in (A), there are more than three lines in the triangular figure.
49. (E) In all the other figures except (E) the design is made of st. lines as well as curve which in (E) it is made of only curves.
50. (A) In all the figures except (A) both the interacting designs are same which in (A) they are different.

Exercise 7

1. (C) In each subsequent figure one new design is taking place but in fig. (C) there are two new designs. Hence fig. (C) does not fit into the series.
2. (D) The whole design rotates two times through 135° anticlockwise and then 45° clockwise while the arrow reverses in alternate figures. Hence from (C) to (D) it should reverse but it does not. Hence fig. (D) does not fit into the series.
3. (D) In each subsequent figure all the designs are shifting after moving through 90° clockwise but from fig. (C) to (D) some designs are not moving through 90°. Hence fig. (D) does not fit into the series.
4. (E) In each subsequent figure the lines are increasing by 2, 4, 6, 8, 10 and 12 respectively. But in fig. (E) instead of 10 there is increase of 11 lines. Hence fig. (E) does not fit into the series.
5. (D) In each subsequent figure a new design is increased in the middle of left. The design from the middle of left shifts to lower left. The design from the lower left shifts to upper left and the design from the upper left shifts to the centre. But in fig. (D) the design circle does not shift from upper left to centre. Hence fig. (D) does not fit into the series.
6. (E) From first to (A) only upper most design reverses. From (A) to (B) second and third designs from the top reverse. From (B) to (C), fourth, first and second from the top reverse. From (C) to (D) only one design at third place from the top reverse.

Hence from (D) to (E) the designs at fourth and first should reverse but it is not so in fig. (E).

7. (B) The designs are shifting as shown below:

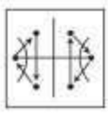
But in fig. (B) it is not so.

8. (E) From main figure to (A) the central and lower designs interchange their positions and the central design after shifting reverses while upper most design at its own place reverses and takes a new shape. From (A) to (B) the central and upper designs interchange their positions and the upper design after shifting reverses while the lower most design at its own place reverses and takes a new shape. This rule is repeated. But in (E) this rule does not fit.

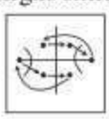
9. (E) Starting from the left in every subsequent figure two designs interchange their positions. Hence in (E) the two middle designs should interchange their positions. But it is not so.

10. (C) In each subsequent figure the line inside the hexagon shift one, two, three, four, five and for six lines respectively anticlockwise and goes from in to out and *vice-versa* while the other design shifts 2, 3, 4, 2, 3 and 4 sides anticlockwise respectively and goes from out to in and *vice-versa*. But in (C) it is not so.

11. (B) From main fig. to (A) all the designs shift as shown below :



From (A) to (B) designs shift as shown below :



The same rule is repeated. But fig. (B) does not fit into the series.

12. (E) From main fig. to (A), from (B) to (C) and (D) to (E) both the designs inner as well as outer interchange their places. But it is not so in (E).

13. (C) From main fig. to (A) the design shifts $\frac{1}{2}$ side anticlockwise and a same design appears ahead of it. From (A) to (B) each of the both designs shifts one side anticlockwise and a same design appears ahead of it. The same rule is repeated. But in fig. (C) this rule is not applicable. Hence (C) does not fit into the series.

14. (D) In each subsequent figure the whole design moves through 45° clockwise. Besides $\begin{matrix}1\\2\\3\end{matrix}$ from main design to (A) design from (1) shifts to (2). From (A) to (B) design from (3) shifts to (2) and from (B) to (C) the design from (1) shifts to (2) and each time one new design takes place at each of their places. But fig. (D) does not follow this rule.

15. (E) From main figure to (A) the design comes out as it is after enlarging and a new design takes place inside. The same rule is repeated later on. But in (E) it is not applicable. The design inside comes in next figure in inverted form.

16. (C) In each subsequent figure the design 'A' shifts $\frac{1}{2}$, $1\frac{1}{2}$, $\frac{1}{2}$, $1\frac{1}{2}$, $\frac{1}{2}$ and $1\frac{1}{2}$ sides respectively anticlockwise but in fig. (C) it is not so.

17. (B) In each subsequent figure the design ↑ after moving 90° anticlockwise and 45° clockwise respectively shifts $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$ and 3 sides clockwise but in (B) it is not so.

18. (D) In each subsequent figure the number of increased lines is 5, 3, 5, 3, 5 and 3 respectively but each time the increase is from upper left corner. But in (D) it is not so.

19. (E) From main figure to (A) two more half circles and blackend. But (A) to (B) black part of a circle which is ahead in clockwise direction disappears. The rule is repeated. Besides black part appears clockwise. But (E) it is not so.

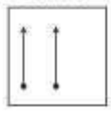
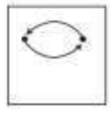
20. (A) In next figure both the diagrams interchange their positions and outer diagram after reaching inside moves through 45° clockwise. After this in next figure both the designs take new shape. The same rule is repeated. But in (A) the design moves through 90° instead of 45°.

21. (D) In each subsequent figure the design 'P' shifts O and then $\frac{1}{2}$ sides respectively clockwise after moving through 90° and 45° respectively clockwise while the design T shifts 0 and then $\frac{1}{2}$ sides respectively anti-clockwise respectively after moving through 180° and 45° clockwise. But in (D) this rule is not applicable.

22. (E) In each subsequent figure the no. of lines is decreasing by 2, 3, 2, 3, 2 and 3 respectively but in (E) it is not so.

23. (D) In each subsequent figure first arrow from the left moves through 90°, 90°, 180°, 180°, 90° and 90° anticlockwise. But in figure (D) it is not so.

24. (A) In subsequent figure the designs are shifting as shown below :

 and  respectively. But in (B) it is not so.

25. (D) In each next step the design is moving through 90° 135°, 180°, 225°, 270° and 315° clockwise. Besides, one line is increased each time to the left side.

Series Tests

(A) Verbal

In this type of test some numbers and/or letters are given. They all form a series and change in a certain order. Series has one or more letters or numbers missing. The candidates are required to observe that specific order in which the number or better would suit for the blank space if they continue to change in the same order.

Some Points to Remember :

1. If the value of numbers is increasing in little amount then there is definitely the work of addition.
2. If the value of numbers is decreasing in little amount then there is definitely the work of subtraction.
3. If the value of numbers in the series is increasing in high amount then there is the work of multiplication. Besides addition/ subtraction is also possible.
4. If the value of numbers in the series is decreasing in high amount then there is the work of division. Besides addition/subtraction is also possible.
5. If the value of the numbers in the series first is increasing and then decreasing but the difference be least as far as possible, then the working of addition and subtraction is going on changing.

Kinds of Series :

(1) General, (2) Mixed, (3) Complex, (4) Based on digits, (5) Based on letters.

Note—The series are based on additionl, subtraction, multiplication and division. Sometimes the squares and cubes are also added and subtracted. Series are also in alternate forms.

Example 1. 7, 12, 19, ? 39.

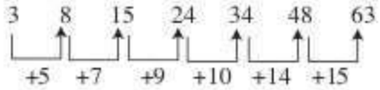
Answer with Explanation :

$$7 + 5 = 12$$
$$12 + 7 = 19$$
$$19 + 9 = \boxed{28}$$
$$28 + 11 = 39$$

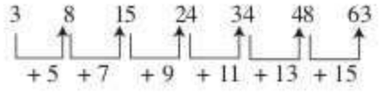
A number in the interval of 2, is added to each number of the series.

Example 2. Which term of the series is wrong ?

Answer with Explanation :



Here, we see that the numbers, which are added, are at the interval of 2. So, the wrong number 34. If 34 is replaced by 35, then the series becomes correct as shown below



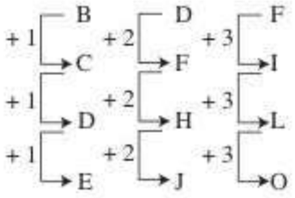
Example 3. Z, X, V, T, R, (...), (...)

Answer with Explanation : On writing the position numbers of letters in alphabet, we get

26	24	22	20	18	16	14
Z	X	V	T	R	(P)	(N)

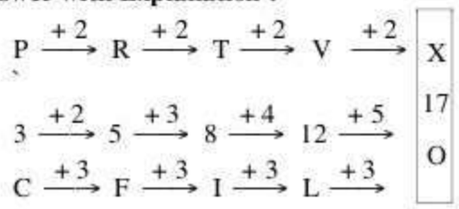
Example 4. BDF, CFI, DHL ?

Answer with Explanation :



Example 5. P 3 C, R 5 F, T 8 I, V 12 L, ?

Answer with Explanation :



(B) Non-verbal

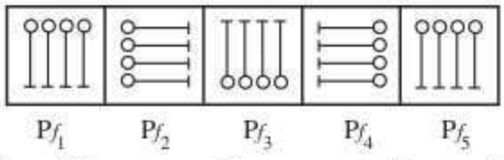
In this type of questions, there are two sets of figures. One set is called 'Problem Figures' while the other as 'Answer Figures'. Problem figures are first and five in number while answer figures are after and five in number. The answer figures are indicated by A, B, C, D and E. The five problem figures make a series. That means they change from left to right in specific order. The question is, if the figures continue to change in the same order what should be the sixth figure ?

The candidate has to find out which one of answer figures provides the answer.

Some Important Rules to Solve the Problems in Series

Rule (1)—If in the series first problem figure is same to fifth problem figure, then answer figure will be same to second problem figure.

Example (i)

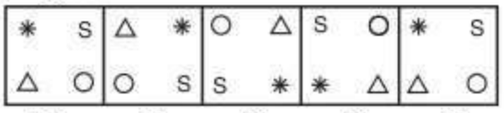


Here Pf_1 and Pf_5 are same. Hence, answer figure and Pf_2 will be same.

Therefore, answer figure is

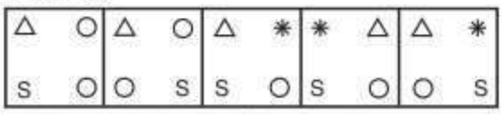
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

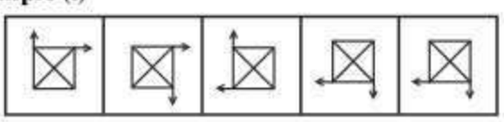


(A) (B) (C) (D) (E)

Here $Pf_1 = Pf_5$, hence answer figure will be Pf_2 which is (E) in answer figures.

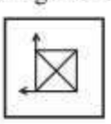
Rule (2)—In the series if $Pf_4 = Pf_5$ then Pf_3 = answer figure.

Example (i)



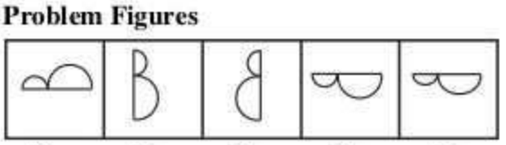
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here $Pf_4 = Pf_5$, hence answer figure = Pf_3.

Therefore, answer figure is 

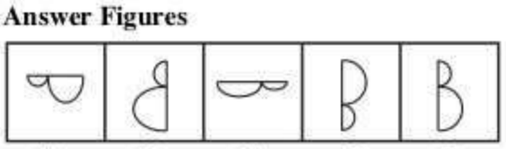
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

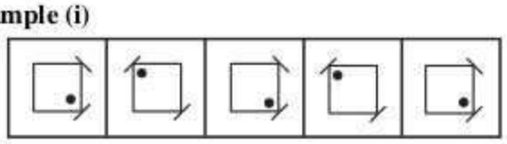


(A) (B) (C) (D) (E)

Here $Pf_4 = Pf_5$. Hence, answer figure = Pf_3 which is (B) in answer figures.

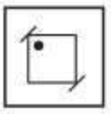
Rule (3)—In the series if $Pf_1 = Pf_3 = Pf_5$ then $Pf_2 = Pf_4 = Pf_6$ (answer figure).

Example (i)



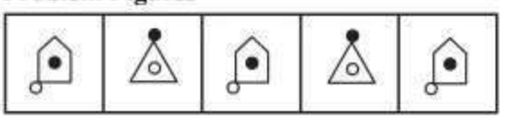
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here $Pf_1 = Pf_3 = Pf_5$. Hence, $Pf_2 = Pf_4 = Pf_6$ (answer figure)

Hence, answer figure is 

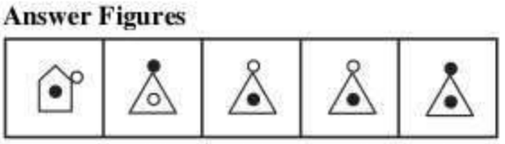
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

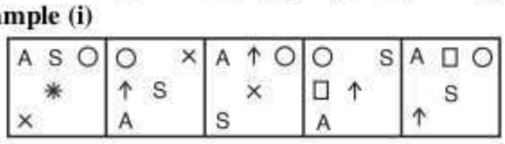


(A) (B) (C) (D) (E)

Here $Pf_1 = Pf_3 = Pf_5$. Hence, $Pf_2 = Pf_4 = Pf_6$ which is (B) in answer figures.

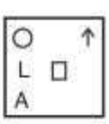
Rule (4)—In the series if $Pf_1 = Pf_2$ and $Pf_3 = Pf_4$ then Pf_5 = answer figure or $Pf_1 : Pf_2 :: Pf_3 : Pf_4$ then $Pf_5 : Pf_6$.

Example (i)



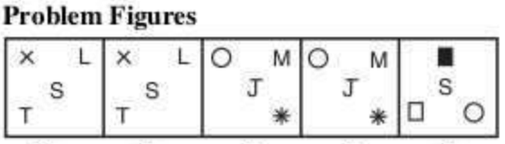
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here the relation between Pf_1 and Pf_2 is same as the relation Pf_3 and Pf_4. Hence, the same relation will be between Pf_6 and answer figure.

Therefore, answer figure is 

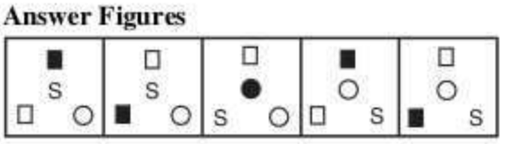
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures



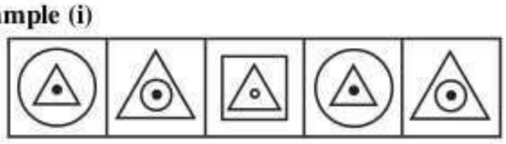
(A) (B) (C) (D) (E)

Here $Pf_1 = Pf_2$ and $Pf_3 = Pf_4$.

Hence, answer figure = Pf_6 which is (A) in answer figures.

Rule (5)—In the series if $Pf_1 = Pf_4$ and $Pf_2 = Pf_5$ then answer figure = Pf_3.

Example (i)



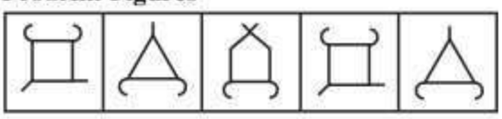
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here $Pf_1 = Pf_4$ and $Pf_2 = Pf_5$ so Pf_3 = answer figure.

Hence, answer figure is

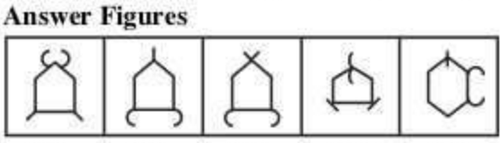
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

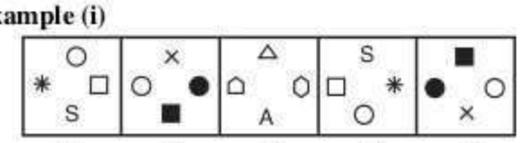


(A) (B) (C) (D) (E)

Here $Pf_1 = Pf_4$ and $Pf_2 = Pf_5$, hence answer figure = Pf_3 which is (C) in answer figures.

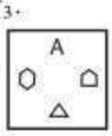
Rule (6)—In the series if Pf_4 = inverse of Pf_1 and Pf_5 = inverse of Pf_2 the answer figure = inverse of Pf_3.

Example (i)



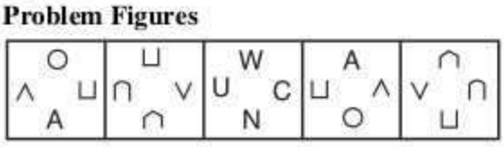
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here Pf_4 = inverse of Pf_1 and Pf_5 = inverse of Pf_2, so answer figure = inverse of Pf_3.

Hence, answer figure is 

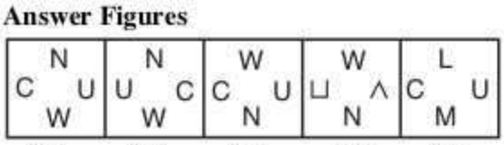
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

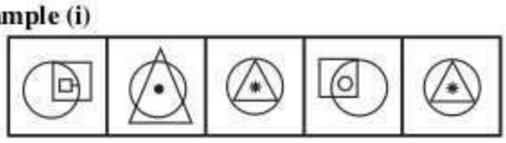


(A) (B) (C) (D) (E)

Here Pf_4 = inverse of Pf_1 and Pf_5 = inverse of Pf_2 so answer figure = inverse of Pf_3 which is (A) in answer figures.

Rule (7)—In the series if $Pf_3 = Pf_5$ then answer figure = Pf_2.

Example (i)



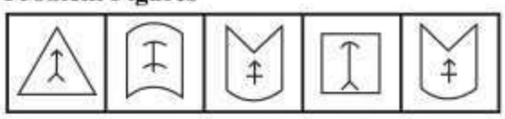
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here $Pf_3 = Pf_5$, hence answer figure = Pf_2.

Therefore, answer figure is

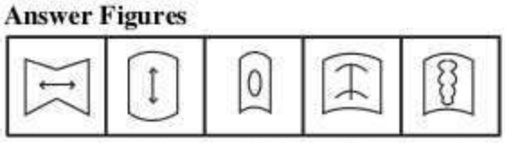
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures



(A) (B) (C) (D) (E)

Here $Pf_3 = Pf_5$, therefore, answer figure = Pf_2 which (D) in answer figures.

Rule (8)—In the series if Pf_1, Pf_2, Pf_3, Pf_4 and Pf_5 all are different from one another and appear indefinite, then answer figure will also be different from these.

Example (i)

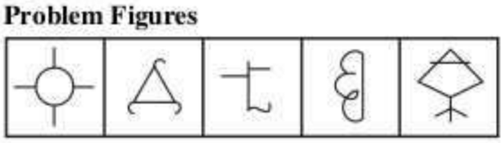
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here all the five problem figures are different from one another so answer figure will also be different from these problem figures.

Hence, answer figure is

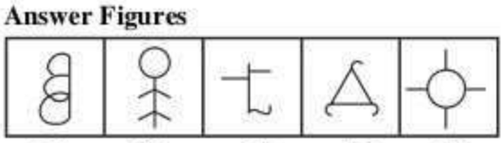
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures



(A) (B) (C) (D) (E)

Here $Pf_1 \neq Pf_2 \neq Pf_3 \neq Pf_4 \neq Pf_5$, therefore, answer will be different from these five figures which is (B) in answer figures.

Rule (9)—In the series if letters of English alphabet are used as figures then the lines used in the letter are considered.

Example (i)

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here the numbers of lines used in letters are 2, 3, 4, 5 and 5 respectively. Hence, the number of lines used in the letter of answer figure will be 4.

Therefore, answer figure is

Example (ii)

Problem Figures

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

(A) (B) (C) (D) (E)

Here the numbers of lines used in letters are 1, 2, 3, 4 and 3 respectively. Here the number of lines used in letter of answer figure will be 2 which in T in the answer of (D).

Exercise 1

Directions—In the series of each question what will replace the question-mark ?

1. 456, 546, 654, 654, 789, (?), 987
   (A) 978 (B) 789
   (C) 897 (D) 879
2. 6, 11, 21, 36, 56, (?)
   (A) 51 (B) 42
   (C) 81 (D) 91
3. 2, 15, 41, 80, (?)
   (A) 111 (B) 120
   (C) 121 (D) 132
4. 1, 2, 6, 24, (?)
   (A) 60 (B) 95
   (C) 120 (D) 150
5. 3, 12, 27, 48, 75, 108, (?)
   (A) 147 (B) 162
   (C) 183 (D) 192
6. 134, 245, 356, 467, (?)
   (A) 579 (B) 568
   (C) 578 (D) 478
7. 1, 4, 2, 8, 6, 24, 22, 88, (?)
   (A) 86 (B) 352
   (C) 90 (D) 154
8. 13, 32, 24, 43, 35, (?), 46, 65, 57, 76
   (A) 54 (B) 45
   (C) 55 (D) 52
9. $\frac{2}{\sqrt{5}}, \frac{3}{5}, \frac{4}{5\sqrt{5}}, \frac{5}{25}, (?)$
   (A) $\frac{6}{25\sqrt{5}}$ (B) $\frac{7}{25}$
   (C) $\frac{6}{125}$ (D) $\frac{6}{5\sqrt{5}}$
10. 66, 36, 18, (?)
    (A) 3 (B) 8
    (C) 9 (D) 6
11. 2, 3, 8, 63, (?)
    (A) 1038 (B) 3008
    (C) 3968 (D) 1998
12. 8, 10, 14, 18, (?), 34, 50, 66
    (A) 25 (B) 27
    (C) 24 (D) 26
13. 2, 1, 2, 4, 4, 5, 6, 7, 8, 8, 10, 11, (?)
    (A) 12 (B) 11
    (C) 10 (D) 9
14. 11, 10, (?), 100, 1001, 1000, 10001
    (A) 101 (B) 110
    (C) 111 (D) 1101
15. 7, 12, 19, (?), 39
    (A) 28 (B) 26
    (C) 24 (D) 29
16. 0, 6, 24, 60, 120, 210, (?)
    (A) 290 (B) 336
    (C) 504 (D) 240
17. 3, 6, 18, 72, (?)
    (A) 360 (B) 288
    (C) 114 (D) 216
18. 1, 4, 9, 16, 25, (?)
    (A) 36 (B) 35
    (C) 48 (D) 49
19. 5, 9, 17, 29, 45, (?)
    (A) 65 (B) 68
    (C) 70 (D) 60
20. 20, 19, 17, (?), 10, 5
    (A) 14 (B) 13
    (C) 12 (D) 15
21. 1, 6, 15, (?), 45, 66, 91
    (A) 26 (B) 27
    (C) 28 (D) 25
22. 5, 16, 49, 104, (?)
    (A) 148 (B) 170
    (C) 181 (D) 115
23. 1, 2, 5, 12, 27, 58, 121, (?)
    (A) 247 (B) 248
    (C) 249 (D) 246
24. 5, 17, 37, 65, (?), 145
    (A) 95 (B) 97
    (C) 99 (D) 101
25. 17, 19, 23, 29, (?), 37
    (A) 31 (B) 33
    (C) 35 (D) 36
26. 11, 12, 17, 18, 23, 24, (?)
    (A) 30 (B) 35
    (C) 29 (D) 12

27. 6, 14, 30, (?)
(A) 62 (B) 67
(C) 68 (D) 69

28. 19, 2, 38, 3, 114, 4, (?)
(A) 256 (B) 352
(C) 456 (D) 228

29. 21, 25, 33, 49, 81, (?)
(A) 113 (B) 97
(C) 129 (D) 145

30. 9, 11, 20, 31, (?), 82
(A) 41 (B) 51
(C) 71 (D) 60

31. 12, 32, 72, 152, (?)
(A) 613 (B) 325
(C) 312 (D) 515

32. 5, 6, 9, 15, (?), 40
(A) 21 (B) 25
(C) 27 (D) 33

33. 225, 336, 447, (?), 669, 7710
(A) 114 (B) 338
(C) 558 (D) 991

34. 5, 6, 10, 19, 36, 60, (?)
(A) 109 (B) 96
(C) 110 (D) 90

35. 3, (?), 15, 31, 63, 127
(A) 7 (B) 5
(C) 10 (D) 12

36. 1, 0, 3, 2, 5, 4, (?)
(A) 9 (B) 10
(C) 8 (D) 7

37. 1438, 1429, 1417, 1402, (?)
(A) 1378 (B) 1384
(C) 1387 (D) 1392

38. 18, 24, 21, 27, (?), 30, 27
(A) 33 (B) 24
(C) 30 (D) 21

39. 44, 40, 34, (?), 16, 4
(A) 28 (B) 21
(C) 26 (D) 19

40. 110, 99, 86, (?), 54, 35
(A) 81 (B) 71
(C) 67 (D) 75

Exercise 2

Directions—In each of the questions one term is wrong find the wrong term :

1. 11, 2, 21, 3, 32, 4, 41, 5, 51, 6
(A) 32 (B) 51
(C) 11 (D) 21

2. 89, 78, 86, 80, 85, 82, 83
(A) 83 (B) 86
(C) 78 (D) 85

3. 5, 27, 61, 122, 213, 340, 509
(A) 61 (B) 122
(C) 509 (D) 27

4. 196, 169, 144, 121, 80
(A) 169 (B) 196
(C) 121 (D) 80

5. 1, 5, 22, 57, 121, 221
(A) 121 (B) 22
(C) 57 (D) 5

6. 24, 27, 31, 33, 36
(A) 24 (B) 27
(C) 31 (D) 33

7. 1, 3, 7, 15, 27, 63, 127
(A) 7 (B) 15
(C) 63 (D) 27

8. 121, 143, 165, 186, 209
(A) 165 (B) 186
(C) 209 (D) 143

9. 5, 10, 17, 24, 37
(A) 10 (B) 17
(C) 24 (D) 37

10. 445, 221, 109, 46, 25, 11, 4
(A) 46 (B) 109
(C) 221 (D) 25

11. 1, 5, 9, 16, 25, 37, 49
(A) 9 (B) 16
(C) 25 (D) 37

12. 1, 5, 17, 37, 65, 102, 145
(A) 5 (B) 102
(C) 37 (D) None of these

13. 76, 60, 48, 38, 36, 36
(A) 60 (B) 38
(C) 48 (D) 36

14. 196, 169, 144, 121, 100, 80, 64
(A) 169 (B) 80
(C) 64 (D) 196

15. 9, 10, 13, 18, 26, 34, 45
(A) 26 (B) 13
(C) 34 (D) 45

16. 8, 4, 4, 6, 15, 30, 90
(A) 4 (B) 6
(C) 15 (D) 30

17. 2, 18, 4, 20, 8, 22, 16, 25, 32, 26
(A) 18 (B) 16
(C) 25 (D) 32

18. 1, 2, 5, 21, 88, 545
(A) 21 (B) 88
(C) 545 (D) 5

19. 0, 1, 9, 37, 100, 225
(A) 1 (B) 37
(C) 9 (D) 100

20. 7, 8, 19, 57, 232, 1165
(A) 57 (B) 19
(C) 232 (D) 7

21. 9, 40, 156, 464, 928
(A) 156 (B) 40
(C) 464 (D) 928

22. 1, 2, 4, 8, 16, 32, 64, 96
(A) 4 (B) 32
(C) 96 (D) 64

23. 3, 10, 27, 4, 16, 64, 5, 25, 125
(A) 10 (B) 27
(C) 4 (D) 25

24. 6, 14, 30, 64, 126
(A) 6 (B) 14
(C) 64 (D) 126

25. 11, 5, 20, 12, 40, 26, 74, 54
(A) 26 (B) 40
(C) 20 (D) 5

26. 3, 2, 8, 9, 13, 22, 18, 32, 23, 42
(A) 8 (B) 13
(C) 9 (D) 22

27. 1, 2, 1, 2, 2, 4, 6, 12, 24, 60
(A) 1 (B) 12
(C) 60 (D) 24

28. 1, 2, 6, 21, 86
(A) 6 (B) 2
(C) 21 (D) 86

29. 440, 420, 399, 378, 354
(A) 420 (B) 378
(C) 354 (D) 399

30. 64, 32, 18, 8, 4, 2, 1
(A) 18 (B) 8
(C) 32 (D) 1

31. 5, 10, 20, 20, 25, 30
(A) 20 (B) 10
(C) 30 (D) 25

32. 0·5, 1·5, 3·5, 7·5, 15, 31·5
(A) 15 (B) 31·5
(C) 7·5 (D) 1

33. 4, 4, 12, 24, 28, 36
(A) 4 (B) 24
(C) 36 (D) 12

34. 2, 1, 1·5, 2·75, 13·125
(A) 1 (B) 2
(C) 2·75 (D) 13·125

35. 1, 2, 4, 6, 16, 32
(A) 2 (B) 4
(C) 6 (D) 32

36. 5, 10, 17, 27, 37, 50
(A) 10 (B) 27
(C) 37 (D) 50

37. 2, 3, 8, 28, 112, 565
(A) 3 (B) 28
(C) 8 (D) 112

38. 3040, 1520, 760, 390, 190
(A) 3040 (B) 760
(C) 390 (D) 190

39. 9, 20, 33, 49, 65, 84
(A) 9 (B) 49
(C) 65 (D) 33

40. 4, 9, 18, 23, 44, 51, 102
(A) 44 (B) 23
(C) 18 (D) 102

Exercise 3

Directions—In each of the following questions one term is missing as shown by (?). Find the missing term.

1. BDF, CFI, DHL, ?
(A) EJO (B) EML
(C) CJM (D) EMI

2. AD, EH, IL, ? QT
(A) LM (B) MN
(C) MP (D) OM

3. Z, U, Q, ?, L
(A) I (B) N
(C) M (D) K

4. W, V, T, S, Q, P, N, M, ?, ?
(A) J, I (B) I, J
(C) J, K (D) K, J

5. b, e, d, f, ?, h, j, ?, l
(A) i n (B) i m
(C) m i (D) j m

6. A, C, F, H, ?, M
(A) L (B) K
(C) J (D) I

7. Z, S, W, O, T, K, Q, G, ?, ?
(A) N, D (B) N, C
(C) O, C (D) O, D

8. BEH, KNQ, TWZ ?
(A) IJL (B) CFI
(C) BDF (D) ADG

9. FLP, INS, LPV, ?
(A) ORY (B) UXZ
(C) VXY (D) SVW

10. AZ, GT, MN, ?, YB
(A) KF (B) RX
(C) SH (D) TS

11. cx, fu, ir, ?, ol, ri
(A) lo (B) mn
(C) op (D) or

12. U, O, I, ?, A
(A) C (B) E
(C) S (D) G
(E) None of these

13. Z, L, X, J, V, H, T, F, ?, ?
(A) R, D (B) R, E
(C) S, E (D) Q, D
(E) None of these

14. ABD, DGK, HMS, MTB, SBL, ?
(A) ZKW (B) ZBA
(C) ZWK (D) ZKU
(E) None of these

15. A, B, D, G, ?
(A) L (B) K
(C) H (D) M

16. JE, LH, OL, SQ, ?
(A) WX (B) WV
(C) VW (D) VX
(E) XW

17. LXF, MTJ, NPN, OLR, ?
(A) PIU (B) PJW
(C) PKX (D) PPV
(E) PHV

18. J2Z, K4X, I7V, ?, H16R, M22P
(A) L11S (B) L12T
(C) L11T (D) L12S
(E) I11T

19. MHZ, NIW, OKT, PNQ, ?
(A) QRN (B) RRN
(C) QRM (D) QQN
(E) NQP

20. D – 4, F – 6, H – 8, J – 10, ?, ?
(A) K-12 M-13 (B) L-12, M-14
(C) L-12, N-14 (D) K-12, M - 14
(E) H-9, L-13

21. 2Z5, 7Y7, 14 × 9, 23W11, 34V13 ?
(A) 27U24 (B) 47V14
(C) 45U15 (D) 47U15
(E) 48U16

22. KM5, IP8, GS11, EV14, ?
(A) BX17 (B) BY17
(C) CY18 (D) CZ17
(E) CY17

23. AB, BA, ABC, CBA, ABCD, ?
(A) BACD (B) CABD
(C) DBAC (D) DCBA
(E) ACBD

24. EHY, GJW, ?, KNS
(A) ILU (B) IKU
(C) ILT (D) IKT
(E) None of these

25. BEH, DGJ, ?, HKN
(A) GJM (B) FJM
(C) GJL (D) FIL
(E) None of these

26. AT, CR, EP, ?, IL
(A) NG (B) NT
(C) MG (D) IG
(E) None of these

27. a, c, b, d, e, ?
(A) h (B) g
(C) i (D) j
(E) None of these

28. DF, CFG, ?, BCDFH, BCDFHJ
(A) BCDF (B) CDFHJ
(C) CDHFJ (D) BDCF
(E) None of these

29. WXYZ, ?, YZWX, ZWXY, WXYZ
(A) XYZW (B) YZWX
(C) ZWXY (D) XYWZ
(E) None of these

30. ZX ? TR ? NLJ ? D ?
(A) VPHB (B) VRHB
(C) VPJB (D) UPJB
(E) None of these

31. AL, FQ, JU, ?, OZ
(A) MX (B) MW
(C) LX (D) NX
(E) None of these

32. YBV, TGT, OLR, JQP, ?
(A) EWN (B) FVM
(C) EVN (D) EVO
(E) FVN

33. W, Z, C, F, ?
(A) G (B) J
(C) H (D) I
(E) None of these

34. b, c, f, g, j, k, ?
(A) p (B) o
(C) n (D) m
(E) None of these

35. WV, PO, IH, BA, ?
(A) ST (B) UT
(C) RS (D) UV
(E) None of these

36. DEF, HIJ, MNO, ?
(A) IKJ (B) STU
(C) XYZ (D) OPQ
(E) None of these

37. A, A, B, D, G, K, ?, V
(A) Q (B) P
(C) R (D) T
(E) None of these

38. BC, QP, DE, ON, FG, ML, ?
(A) JK (B) KJ
(C) IH (D) HI
(E) None of these

39. B1X, C2W, E4V, H8V, L16T ?
(A) P32S (B) Q32S
(C) Q36S (D) Q32R
(E) None of these

40. 4EZ, 5GY, 7IX, ?, 14MV, 19OU
(A) 10KW (B) 10LW
(C) 9KW (D) 10KY
(E) None of these

Exercise 4

Directions—Find the missing terms in each of the following questions.

1. aa_b_b_ccdd_
(A) abbd (B) abcd
(C) bada (D) adbc

2. w_axy_y_cz_dab_
(A) xbzae (B) baczx
(C) abexz (D) zdexb

3. def_ _f_hfg_i_
(A) egggh (B) ghgeg
(C) ehggg (D) geghg

4. a_u_cuae_a_u_fua_
(A) auabad (B) daubaa
(C) dcuaab (D) bbaadu

5. _c_ca_ab_bc_
(A) abcac (B) babca
(C) ccabb (D) acbba

6. _ _aba_ _ba_ab
(A) abbba (B) abbab
(C) baabb (D) bbaba

7. ab_ _ _b_bbaa_
(A) abaab (B) abbab
(C) baaab (D) babba

8. aa_ab_ _aaa_a
(A) aaab (B) aabb
(C) baaa (D) abab

9. _baa_aab_a_a
(A) aaba (B) abab
(C) baab (D) aabb

10. _ _babbba_a_ _
(A) baaab (B) bbaba
(C) babbb (D) ababb

Directions—(Q. 11 to 15) Find the missing terms.

11. a_ba_bb_ab_a
(A) aaba (B) baab
(C) baaa (D) abab

12. r_sr_tsrrt_rr_sr
(A) ttss (B) tsts
(C) sstt (D) trst

13. BE_K_QBB_EHH_KNNQQ
(A) DLEK (B) HNEK
(C) DLCJ (D) HNCJ

14. APQM_ _QM_P_M_P_M
(A) APAAQA (B) APAQAQ
(C) APAQQA (D) APQAAQ

15. P_QL_QQL_ _ _LPQQ
(A) PQPQQL (B) QQPQQL
(C) PQQPPL (D) QPPQQL

16. c_baa_aca_cacab_acac_bca
(A) bbcaa (B) bccab
(C) cbaac (D) acbaa

17. _bbca_b_cca_ac_a_cb
(A) acbab (B) bacab
(C) cbaab (D) abcba

18. a_bccb_ca_cca_baab_c
(A) ababc (B) accab
(C) bccaa (D) abcaa

19. ab_aa_caab_c_abb_c
(A) bcbca (B) cabac
(C) cbbac (D) bbcaa

20. _bcc_ac_aabb_ab_cc
(A) abaca (B) cabac
(C) bcaca (D) aabca

21. P_ _A_PPC_G_ _C_ _
(A) PCGAPPAG (B) PCGAAPGC
(C) PCGAGGC (D) PCGAAG

22. RA_P_ _R_R_R
(A) RARAPAP (B) PCGAAPGC
(C) PCGAAGGC (D) PCGAAG

23. gfe_ig_eii_fei_gf_ii
(A) ifgie (B) ifige
(C) figie (D) eifgi

24. abc_d_bc_d_b_cda
(A) bacde (B) cdabe
(C) dacab (D) decdb

25. mnonopqopqrs_ _ _ _ _
(A) mnopq (B) pqrst
(C) qrstu (D) decdle

26. ab_ _ha_dd_
(A) ecah (B) lfbh
(C) ddbh (E) dceh

27. _SRR_RR_RRS_
(A) SSRR (B) RSSR
(C) SRRS (D) RRSS

28. ab_da_cdabc_ _bcd
(A) cbdc (B) cbda
(C) adba (D) abbc

29. _bc_caca_ _ bc
(A) abab (B) baba
(C) abba (D) baab

30. ba_b_aab_a_b
(A) abaa (B) abba
(C) baab (D) babb

31. X_ _YZX_Y_ _XX_YZ
(A) XYXYZY (B) XYYZZY
(C) YXZZXZ (D) YZZZXX

32. _ab_a_aa_ba_aab
(A) ababa (B) bbaba
(C) aabbb (D) aacaa

33. a_cc_bab_cab_bc_abab
(A) cbacb (B) abcbc
(C) bacac (D) acbac

34. _cb_aca_bba_ac_bacac
(A) bcbca (B) abccb
(C) cabcb (D) bcaba

35. ab_b_acab_bcbc_
(A) abca (B) cbaa
(C) babc (D) ccaa

36. a_bbc_aab_cca_bbcc
(A) abba (B) caba
(C) bacb (D) acba

37. abca_bcaab_ca_bbc_a
(A) ccaa (B) abac
(C) abba (D) bbaa

38. ab_aa_bbb_aaa_bbba
(A) baab (B) abab
(C) aaab (D) abba

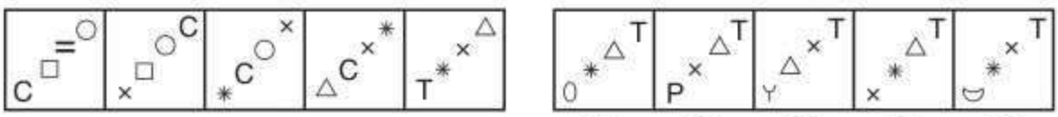
39. abb_baa_a_bab_aba
(A) abab (B) ccac
(C) aabb (D) abba

40. bc_b_c_b_ccb
(A) cbcb (B) bcbc
(C) cbbc (D) bbcb

Exercise 5

Directions—(Q. 1–30) In each of the questions given below which one of the five answer figures on the right should come after the problem figures on the left, if the sequence were continued ?

Problem Figures **Answer Figures**

1. 
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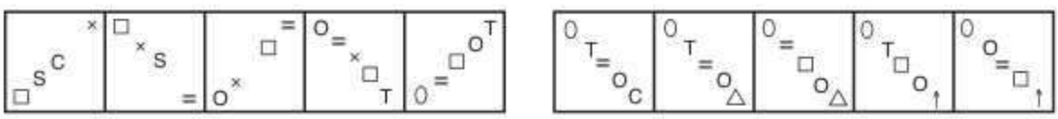
2. 
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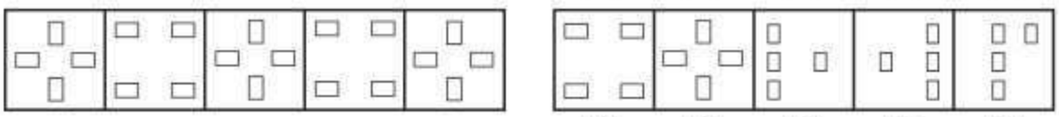
3. 
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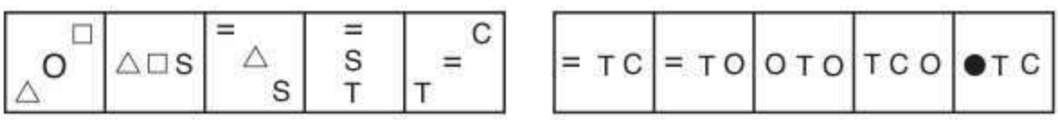
4. 
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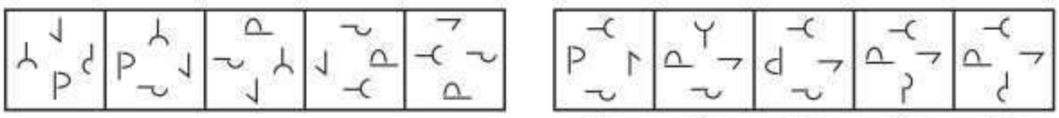
5. 
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6.
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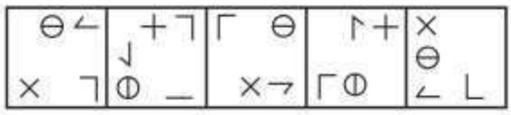

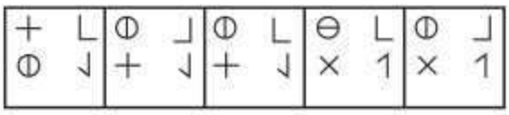

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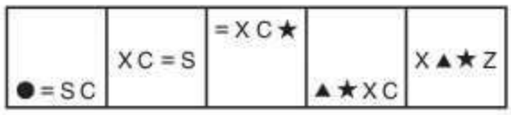

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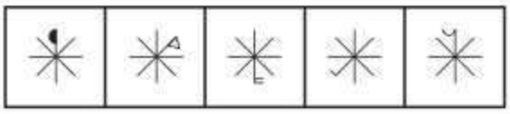

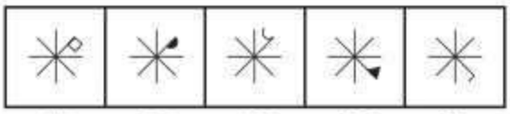

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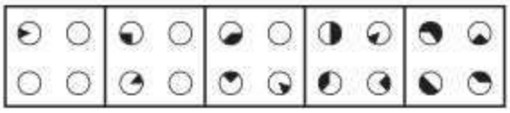

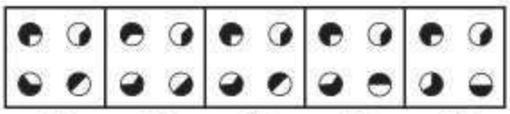

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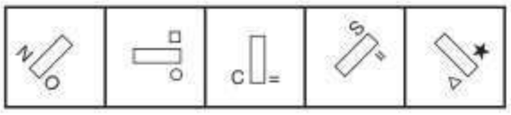

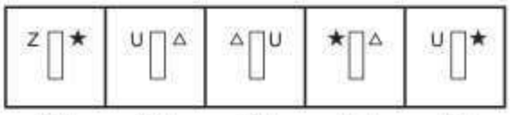

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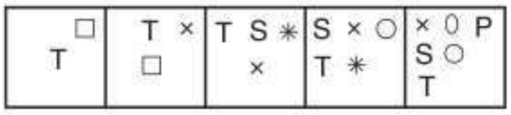

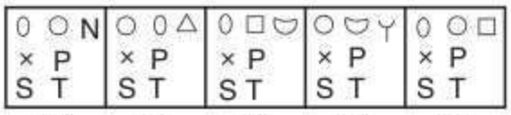

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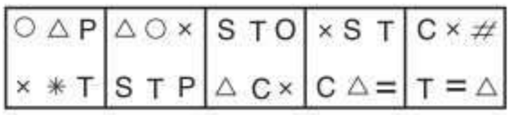

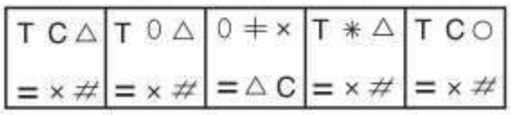

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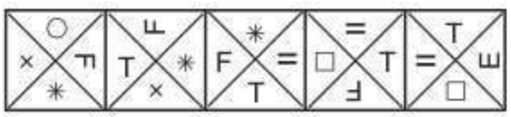

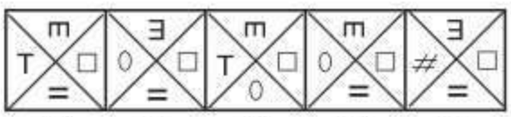

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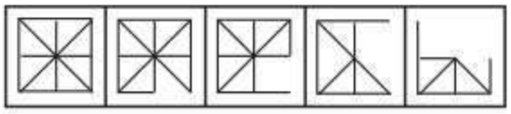

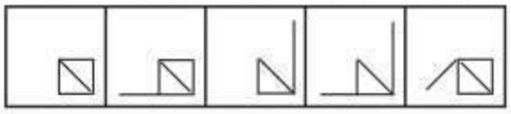

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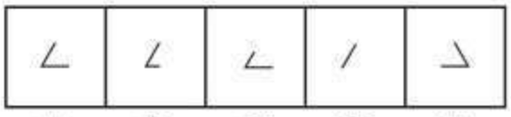

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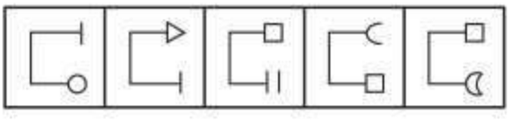

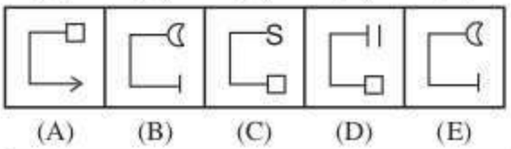

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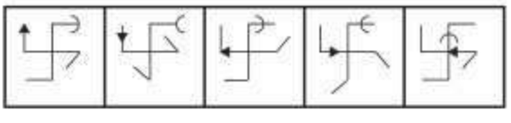

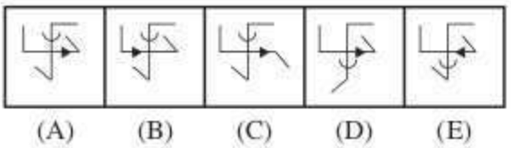

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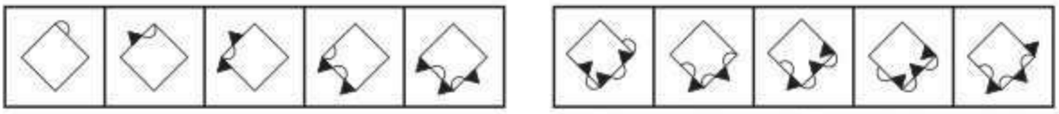
19. 

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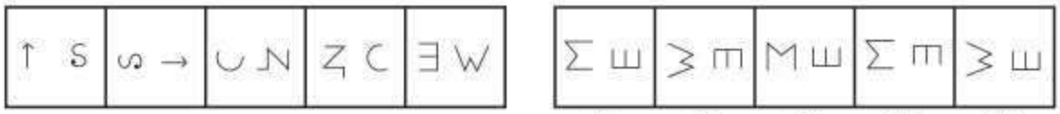
20. 

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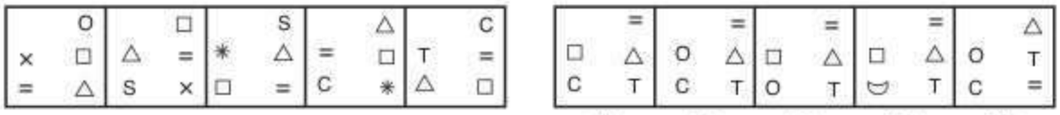
21. 

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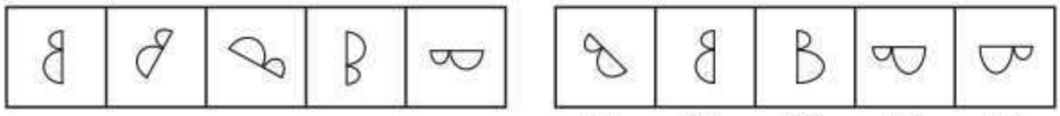
22. 

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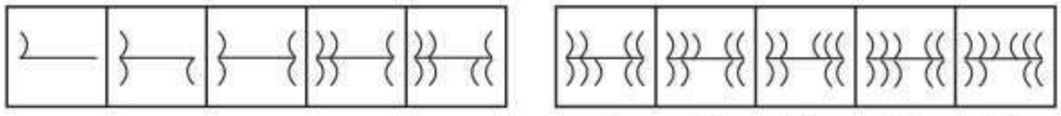
23. 

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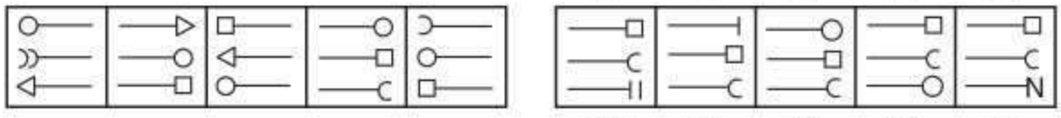
24. 

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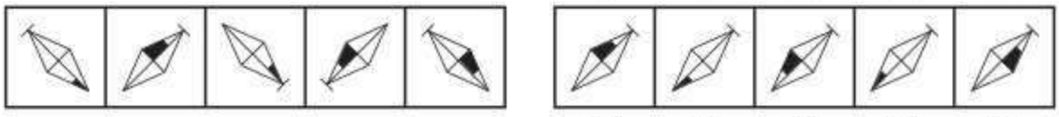
25. 

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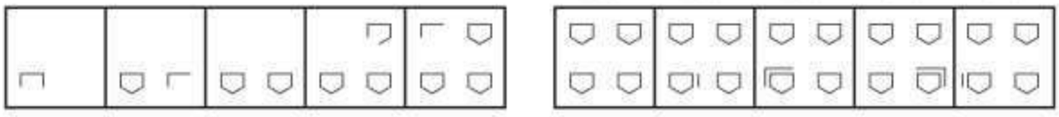
26. 

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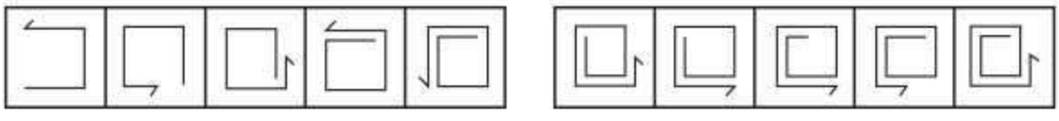
27. 

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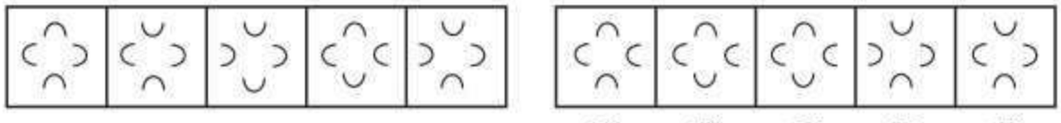
28. 

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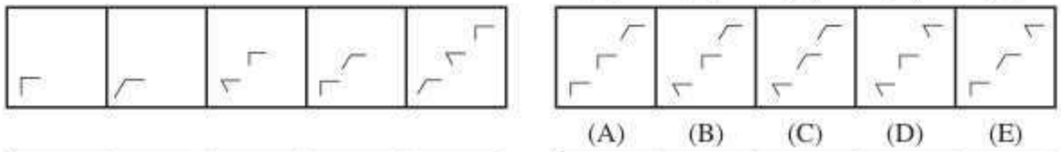
29. 

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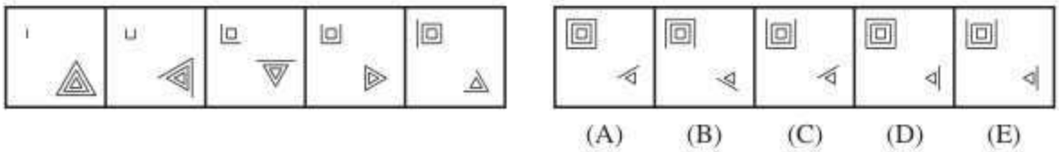
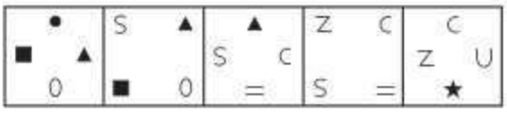
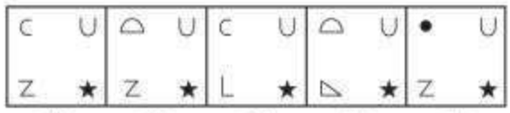
30. 

(A) (B) (C) (D) (E)

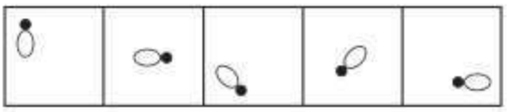
Directions—(Q. 31–60) In each of the questions given below which one of the five answer figures on the right should come after the problem figures on the left, if the sequence were continued ?

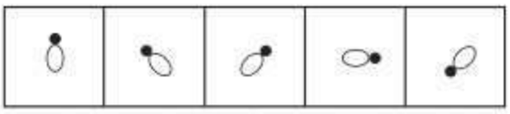
Problem Figures **Answer Figures**

31. 

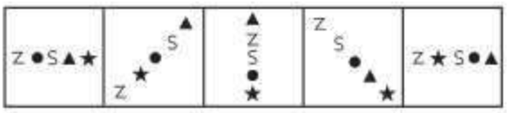


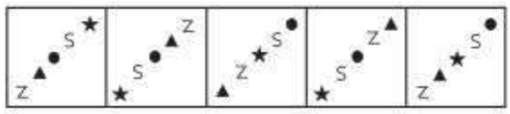
(A) (B) (C) (D) (E)

32. 



(A) (B) (C) (D) (E)

33. 



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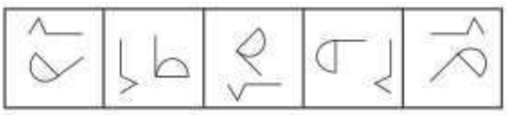
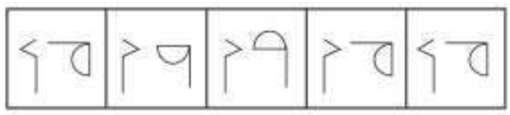
34. 



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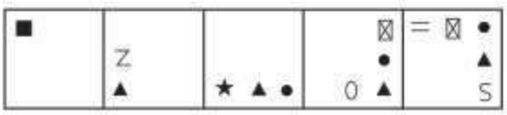
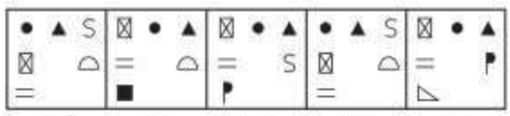
35. 



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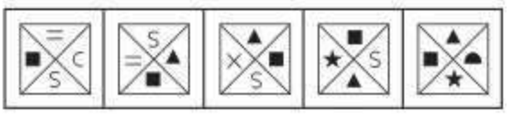
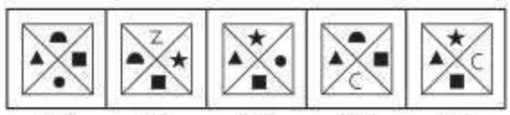
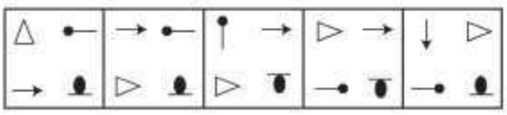
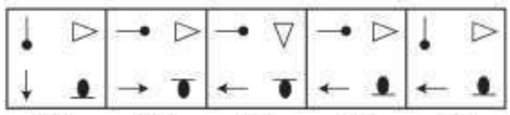
36. 



(A) (B) (C) (D) (E)

37. 



(A) (B) (C) (D) (E)

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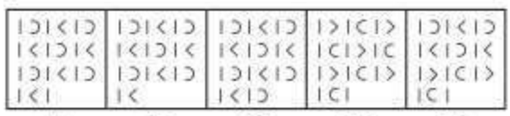

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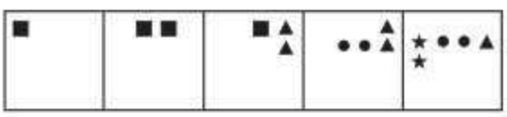
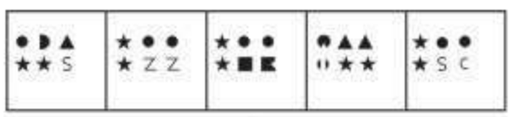
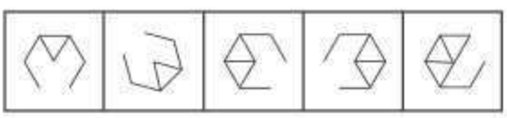
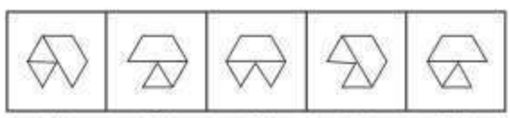
39. 



(A) (B) (C) (D) (E)

40. 



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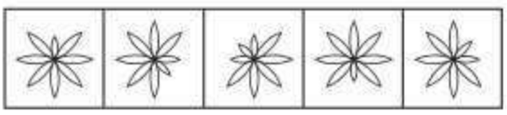
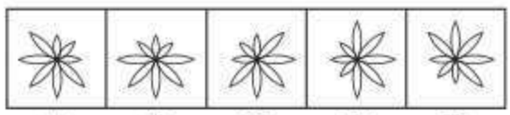
41. 



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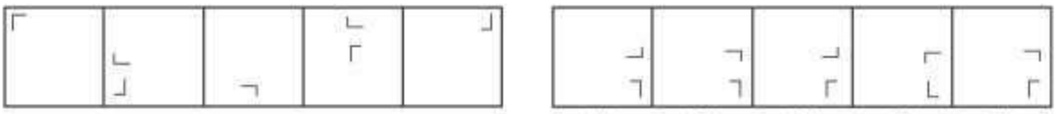
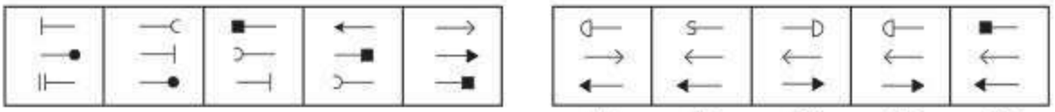
42. 

(A) (B) (C) (D) (E)

43. 

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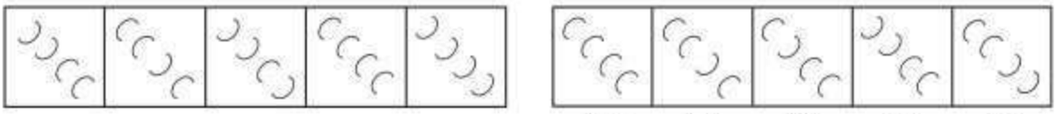
44. 

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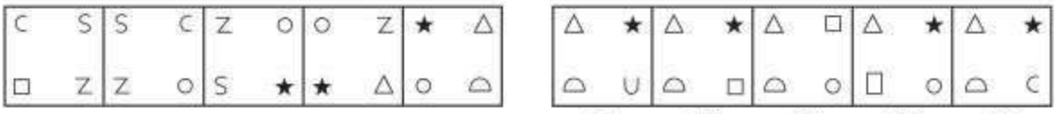
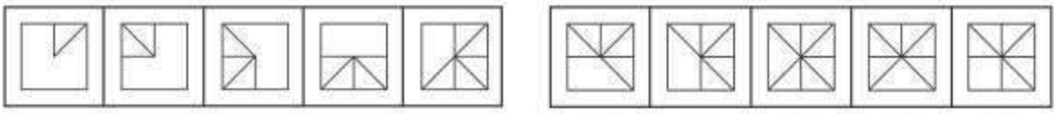
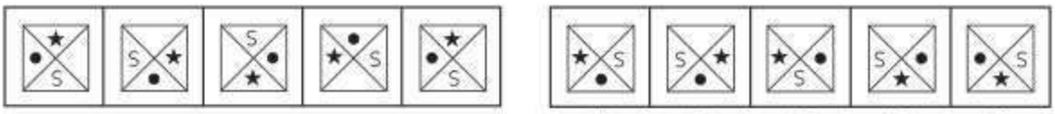
45. 

(A) (B) (C) (D) (E)

46. 

(A) (B) (C) (D) (E)

47. 

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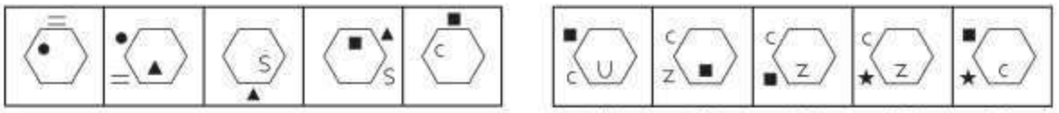
48. 

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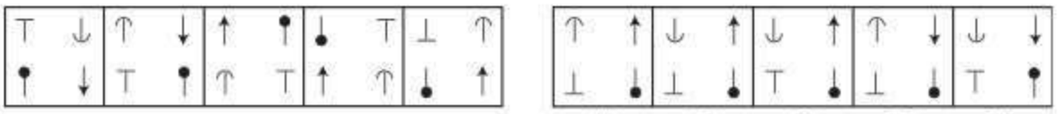
49. 

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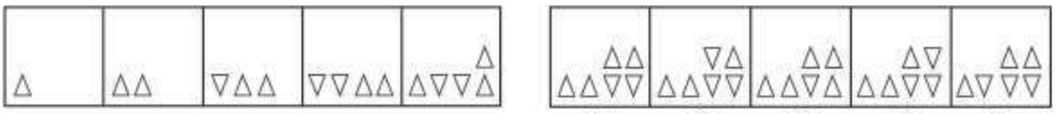
50. 

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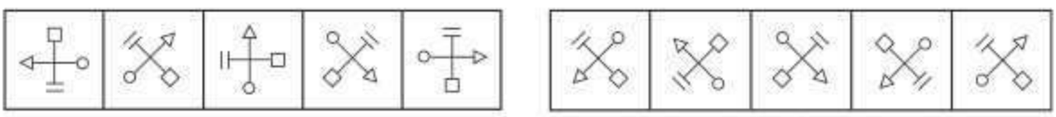
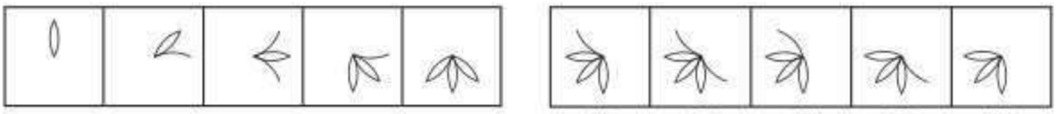
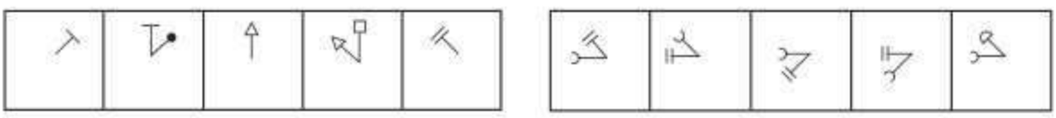
51. 

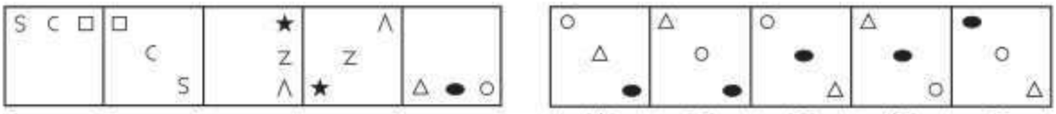
(A) (B) (C) (D) (E)

52. 

(A) (B) (C) (D) (E)

53. 

(A) (B) (C) (D) (E)

54. 
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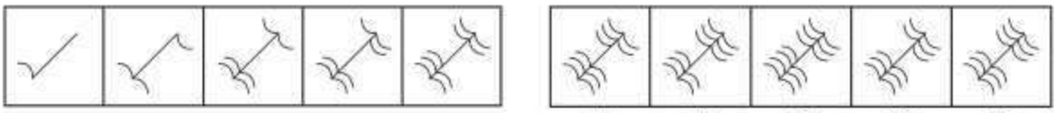
55. 
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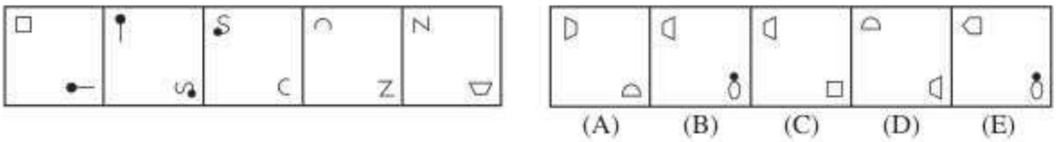
56. 
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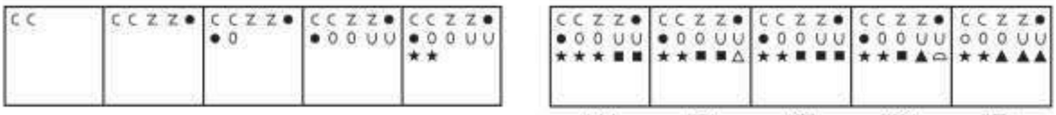
57. 
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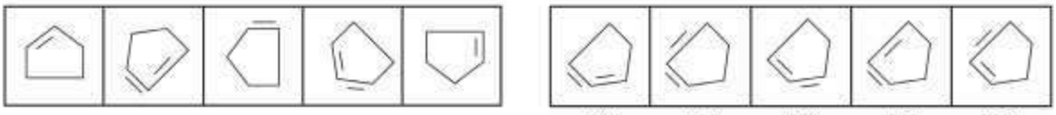
58. 
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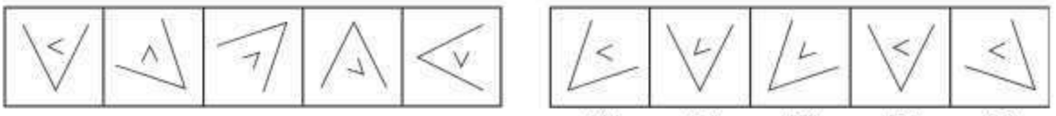
59. 
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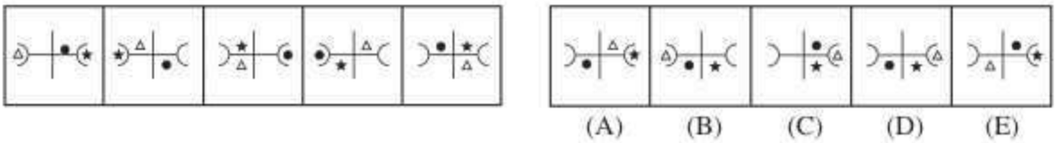
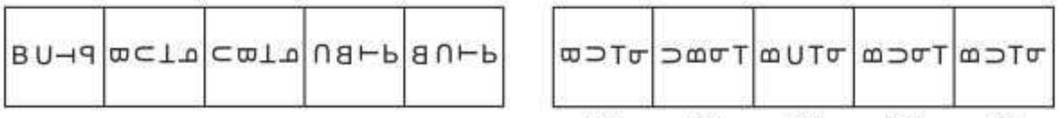
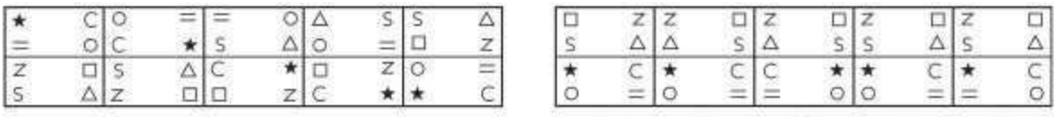
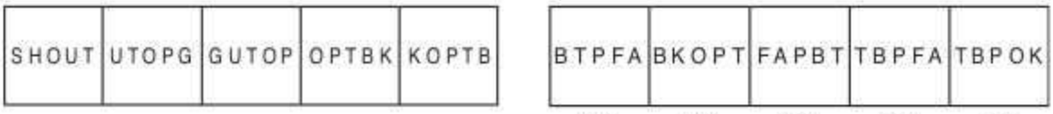
60. 
(A) (B) (C) (D) (E)

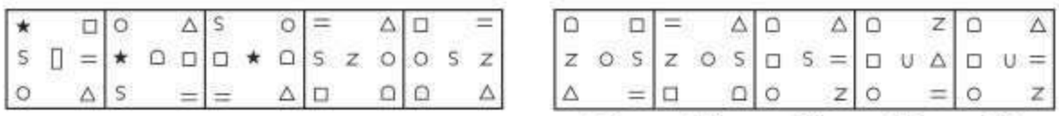
Directions—(Q. 61–65) In each of the questions given below which one of the five answer figures on the right should come after the problem figures on the left, if the sequence were continued ?

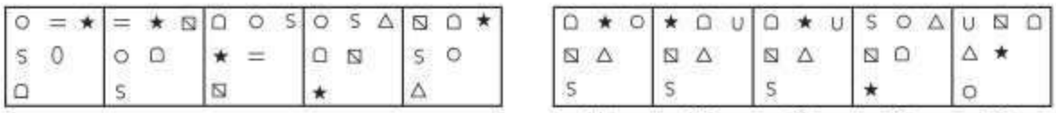
Problem Figures **Answer Figures**

61. 
(A) (B) (C) (D) (E)

62. 
(A) (B) (C) (D) (E)

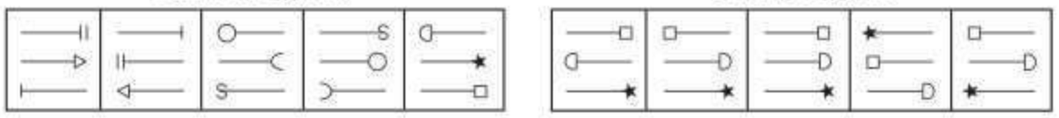
63. 
(A) (B) (C) (D) (E)

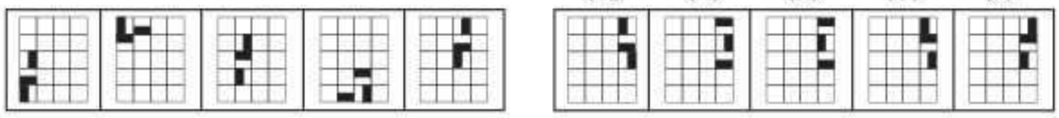
64. 
(A) (B) (C) (D) (E)

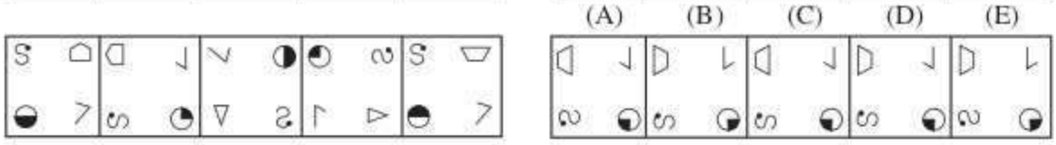
65. 
(A) (B) (C) (D) (E)

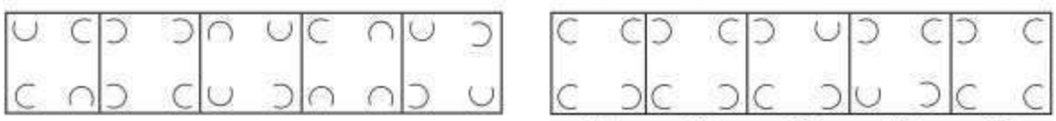
Directions—(Q. 66–70) In each of the questions given below which one of the five answer figures on the right should come after the problem figures on the left, if the sequence were continued ?

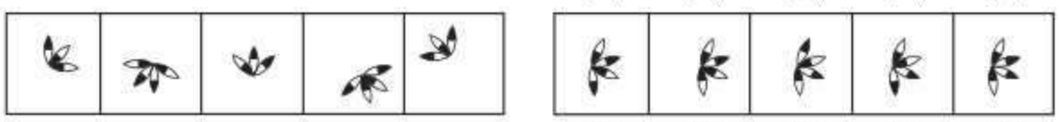
Problem Figures **Answer Figures**

66. 
(A) (B) (C) (D) (E)

67. 
(A) (B) (C) (D) (E)

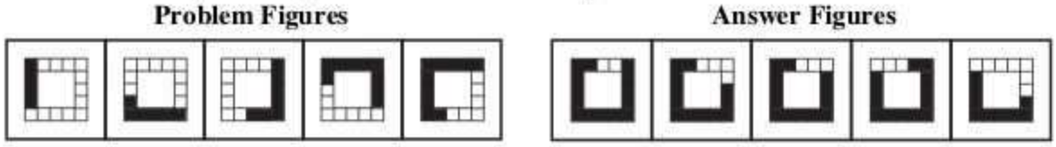
68. 
(A) (B) (C) (D) (E)

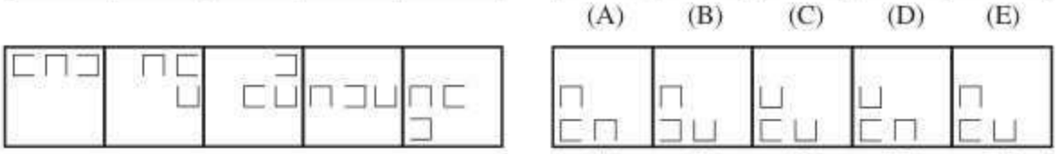
69. 
(A) (B) (C) (D) (E)

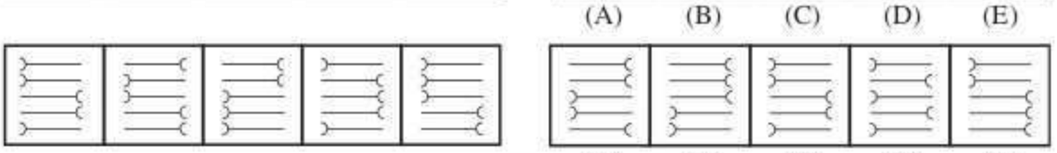
70. 
(A) (B) (C) (D) (E)

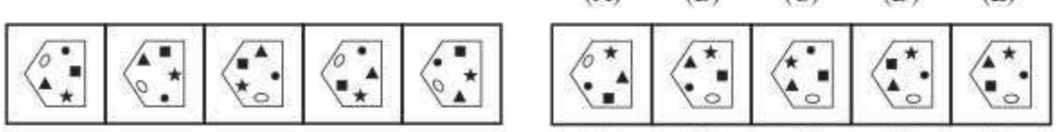
Directions—(Q. 71–75) In each of the questions given below which one of the five answer figures on the right should come after the problem figures on the left, if the sequence were continued ?

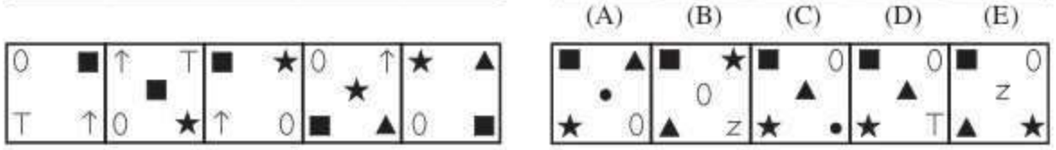
Problem Figures **Answer Figures**

71. 
(A) (B) (C) (D) (E)

72. 
(A) (B) (C) (D) (E)

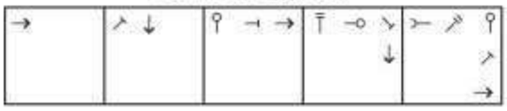
73. 
(A) (B) (C) (D) (E)

74. 
(A) (B) (C) (D) (E)

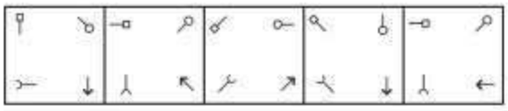
75. 
(A) (B) (C) (D) (E)

Directions—(Q. 76–80) In each of the questions given below which one of the five answer figures on the right should come after the problem figures on the left, if the sequence were continued ?

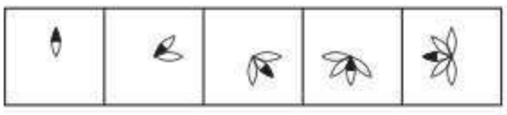
Problem Figures **Answer Figures**

76. 

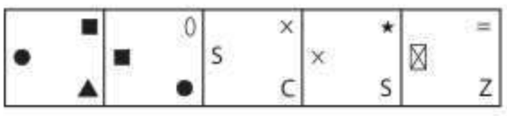
(A) (B) (C) (D) (E)

77. 

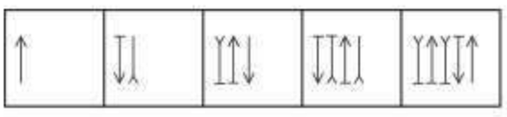
(A) (B) (C) (D) (E)

78. 

(A) (B) (C) (D) (E)

79. 

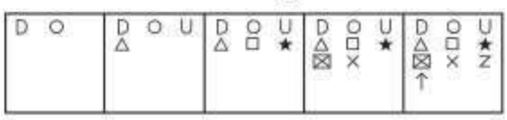
(A) (B) (C) (D) (E)

80. 

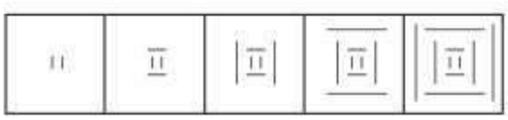
(A) (B) (C) (D) (E)

Directions—(Q. 81–90) In each of the questions given below which one of the five answer figures on the right should come after the problem figures on the left, if the sequence were continued ?

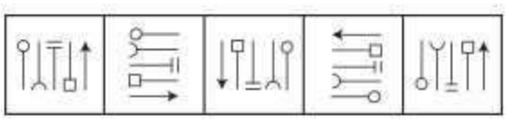
Problem Figures **Answer Figures**

81. 

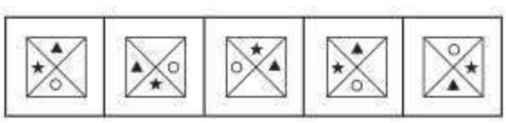
(A) (B) (C) (D) (E)

82. 

(A) (B) (C) (D) (E)

83. 

(A) (B) (C) (D) (E)

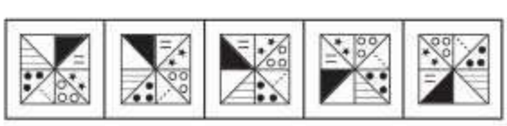
84. 

(A) (B) (C) (D) (E)

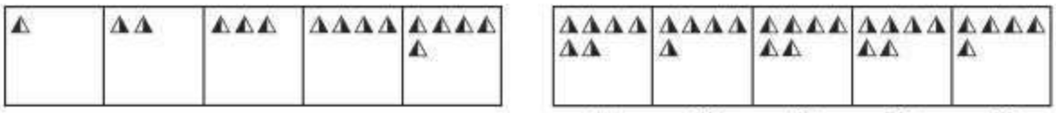
85. MORES | OMERS | MOSRE | OMSER | SMORE

SMOER | OSMER | OMSER | SOMER | SOMRE

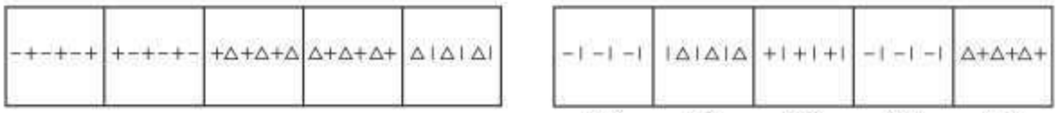
(A) (B) (C) (D) (E)

86. 

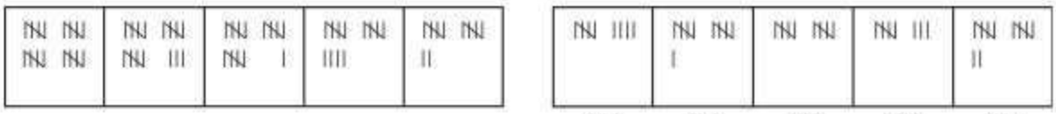
(A) (B) (C) (D) (E)

87. 

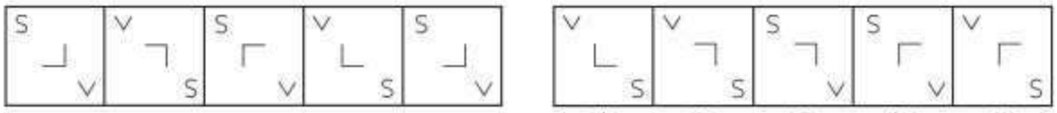
(A) (B) (C) (D) (E)

88. 

(A) (B) (C) (D) (E)

89. 

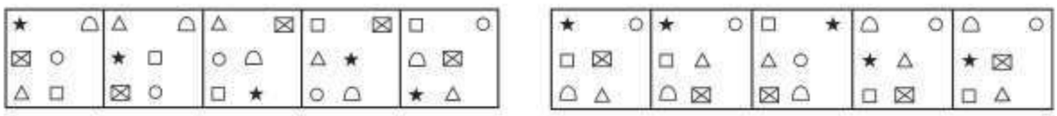
(A) (B) (C) (D) (E)

90. 

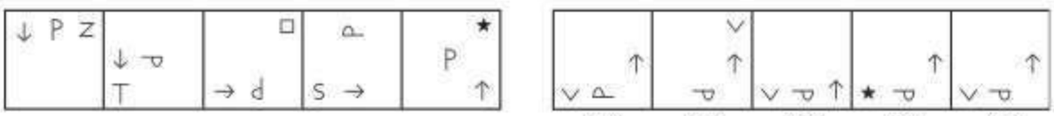
(A) (B) (C) (D) (E)

Directions—(Q. 91–100) In each of the questions given below which one of the five answer figures on the right should come after the problem figures on the left, if the sequence were continued ?

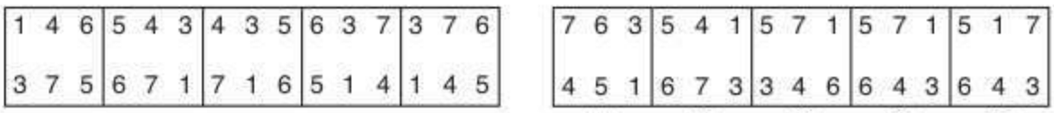
Problem Figures **Answer Figures**

91. 

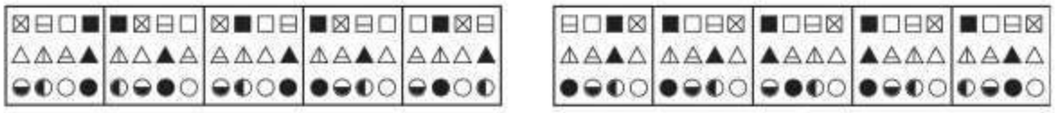
(A) (B) (C) (D) (E)

92. 

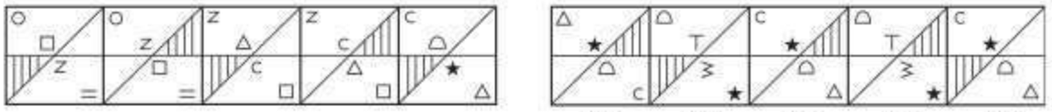
(A) (B) (C) (D) (E)

93. 

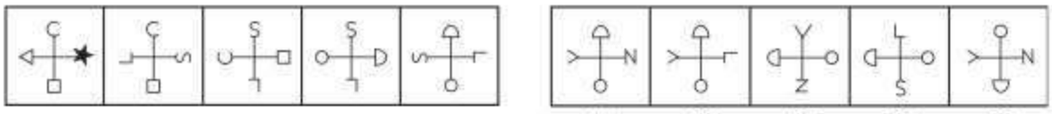
(A) (B) (C) (D) (E)

94. 

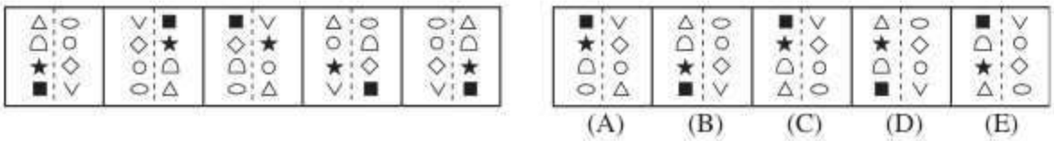
(A) (B) (C) (D) (E)

95. 

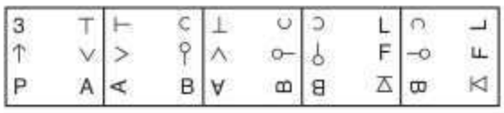
(A) (B) (C) (D) (E)

96. 

(A) (B) (C) (D) (E)

97. 

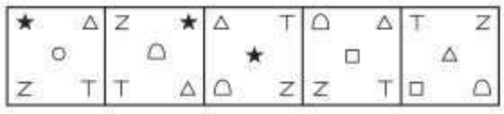
(A) (B) (C) (D) (E)

98. 

(A) (B) (C) (D) (E)

99. PILES SELIP PSELT TLESP PTLEA

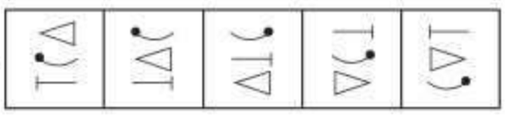
(A) APTLE (B) AELTP (C) APTLD (D) AELPT (E) EALTP

100. 

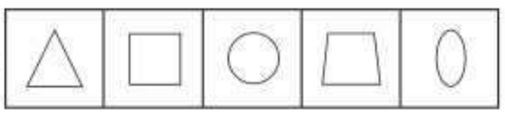
(A) (B) (C) (D) (E)

Directions—(Q. 101–115) In each of the questions given below which one of the five answer figures on the right should come after the problem figures on the left, if the sequence were continued ?

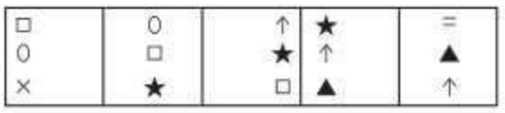
Problem Figures **Answer Figures**

101. 

(A) (B) (C) (D) (E)

102. 

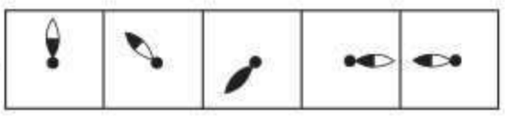
(A) (B) (C) (D) (E)

103. 

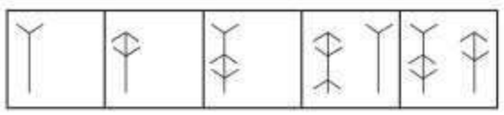
(A) (B) (C) (D) (E)

104.

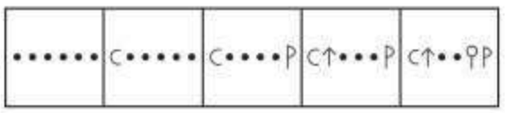
(A) (B) (C) (D) (E)

105. 

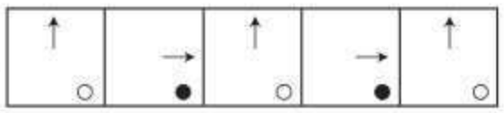
(A) (B) (C) (D) (E)

106. 

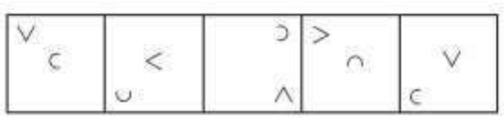
(A) (B) (C) (D) (E)

107. 

(A) (B) (C) (D) (E)

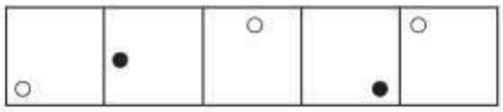
108. 

(A) (B) (C) (D) (E)

109. 

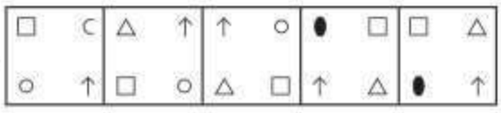
(A) (B) (C) (D) (E)

110.



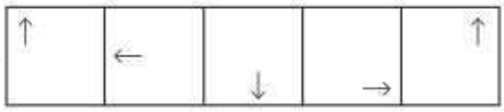
(A) (B) (C) (D) (E)

111.



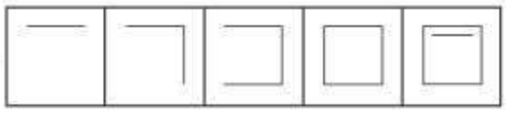
(A) (B) (C) (D) (E)

112.



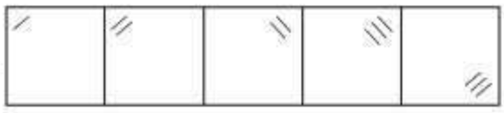
(A) (B) (C) (D) (E)

113.



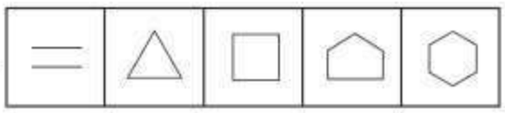
(A) (B) (C) (D) (E)

114.



(A) (B) (C) (D) (E)

115.



Answers with Explanations

Exercise 1

1. (D) If 456, 546, 654, then 789, [879], 987.

2. (C) 6, 11, 21, 36, 56, [81]
   (+5, +10, +15, +20, +25)

3. (D) 2, 15, 41, 80, [132]
   (+13, +26, +39, +52)

4. (C) 1, 2, 6, 24, [120]
   (1×1+1, 2×2+2, 6×3+6, 24×4+24)

5. (A) 3, 12, 27, 48, 75, 108, [147]
   (+9, +15, +21, +27, +33, +39)

6. (C) 134, 245, 356, 467, [578]
   (+111, +111, +111, +111)

7. (A) 1, 4, 2, 8, 6, 24, 22, 88, [86]
   (1×4, 4−2, 2×4, 8−2, 6×4, 24−2, 22×4, 88−2)

8. (A) 13, 32, 24, 43, 35, [54], 46, 65, 67, 76
   (+11, +11, +11, +11, +11, +11, +11, +11)

9. (A) $\frac{2}{\sqrt{5}} \xrightarrow{+1} \frac{3}{5} \xrightarrow{+1} \frac{4}{5\sqrt{5}} \xrightarrow{+1} \frac{5}{25} \xrightarrow{+1} \boxed{\frac{6}{25\sqrt{5}}}$
   (×√5, ×√5, ×√5, ×√5)

10. (B) 66, 36, 18, [8]
    (6×6, 3×6, 1×8)

11. (C) 2, 3, 8, 63, [3968]
    ($(2)^2-1$, $(3)^2-1$, $(8)^2-1$, $(63)^2-1$)

12. (D) 8, 10, 14, 18, 26, 34, 50, 66
    (×2−2, ×2−2, ×2−2)

    There are two series.

13. (C) 2, 1, 2, 4, 4, 5, 6, 7, 8, 8, 10, 11, [10]
    (+3, +3, +3; +2, +2, +2, +2)

    There are three series.

14. (A) There are two series
    (I) 11, 101, 1001, 10001
    One zero is increased between two digits of 1 – 1.
    (II) 10, 100, 1000, ...
    One zero is increased in the end.

15. (A) 7, 12, 19, [28], 39
    (+5, +7, +9, +11)

16. (B) 0, 6, 24, 60, 120, 210, [336]

$(1)^3 - 1 = 0$
$(2)^3 - 2 = 6$
$(3)^3 - 3 = 24$
$(4)^3 - 4 = 60$
$(5)^3 - 5 = 120$
$(6)^3 - 6 = 210$
$\therefore \quad ? = (7)^3 - 7 = 336$

17. (A) 3, 6, 18, 72, [360]
×2, ×3, ×4, ×5

18. (A) 1, 4, 9, 16, 25, [36]
+3, +5, +7, +9, +11

Or

1 4 9 16 25 [36]
1^2 2^2 3^2 4^2 5^2 6^2

19. (A) 5, 9, 17, 29, 45, [65]
+4, +8, +12, +16, +20

20. (A) 20, 9, 17, 14, 10, 5
−1, −2, −3, −4, −5

21. (C) 1, 6, 15, [28], 45, 66, 91
+5, +9, +13, +17, +21, +25

22. (C) 5, 16, 49, 104, [181]
+11, +33, +55, +77

23. (B) 1, 2, 5, 12, 27
×2+0, ×2+1, ×2+2, ×2+3

58, 121, [248]
2+4, ×2+5, ×2+6

24. (D) 5, 17, 37, 65, [101], 145
+12, +20, +28, +36, +44

25. (A) 17, 19, 23, 29, [31], 37

This series is of prime numbers whose first term is 17 and the last term is 37.

26. (C) 11, 12, 17, 18, 23, 24, [29]
+1, +5, +1, +5, +1, +5

27. (A) 6, 14, 30, [62]
6×2+2, 14×2+2, 30×2+2

28. (C) [19, 2], [38, 3], [114, 4], [456]
19 × 2 = 38, 38 × 3 = 114, 114 × 4 = 456

29. (D) 21, 25, 33, 49, 81, [145]
+4, +8, +16, +32, +64

30. (B) 9, 11, 20, 31, [51], 82

$9 + 11 = 20$
$20 + 11 = 31$
$31 + 20 = 51$
$51 + 31 = 82$

31. (C) 12, 32, 72, 152, [312]
12×2+8, 32×2+8, 72×2+8, 152×2+8

32. (B) 5, 6, 9, 15, [25], 40
+1, +3, +6, +10, +15

33. (C) 225, 336, 447, [558], 669, 7710

First two digits of each term are 22, 33, 44, 55, 66 and 77 respectively. While third digit of each term is 5, 6, 7, 8, 9, and 10 respectively.

34. (B) 5, 6, 10, 19, 35, 60, [96]
$+(1)^2$, $+(2)^2$, $+(3)^2$, $+(4)^2$, $+(5)^2$, $+(6)^2$

35. (A) 3, [7], 15, 31, 63, 127
3×2+1, 7×2+1, 15×2+1, 31×2+1, 63×2+1

36. (D) 1, 0, 3, 2, 5, 4, [7]
−1, +3, −1, +3, −1, +3

37. (B) 1438, 1429, 1417, 1402, [1384]
−9, −12, −15, −18

38. (B) 18, 27, 21, 27, 24, 30, 27
+3, +3, +3, +3, +3, +3

39. (C) 44, 40, 34, [26], 16, 4
−4, −6, −8, −10, −19

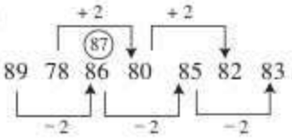
40. (B) 110, 99, 86, [71], 54, 35
−11, −13, −15, −17, −12

Exercise 2

1. (A) 11, 2, 21, 3, 32, 4, 41, 5, 51, 6
+1, +1, +1, +1, (31)
10, +11, +9, +10

32 is wrong. There should be 31 in place of 32.

2. (B)



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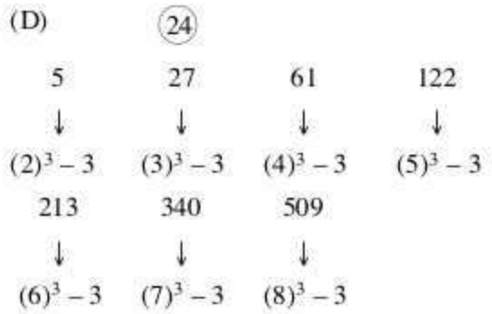

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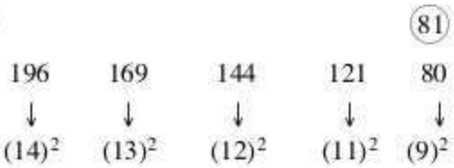

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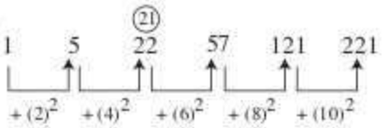

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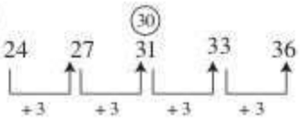

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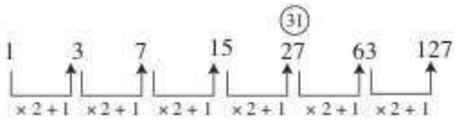

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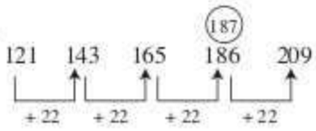

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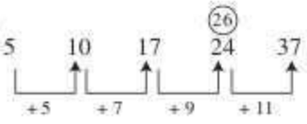

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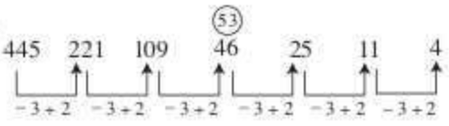

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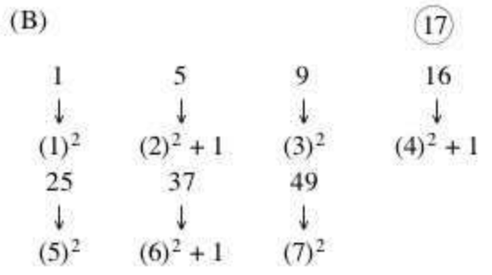

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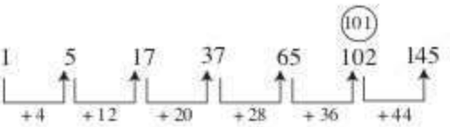

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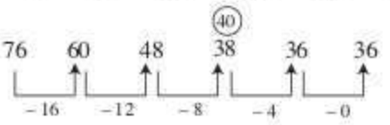

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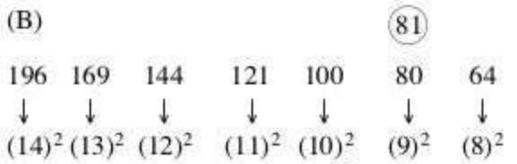

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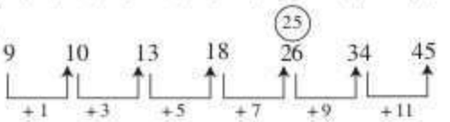

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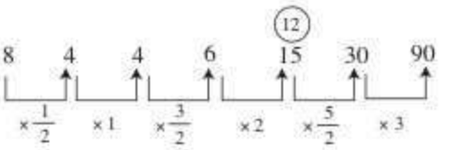

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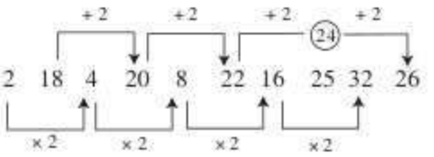

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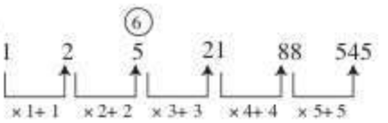

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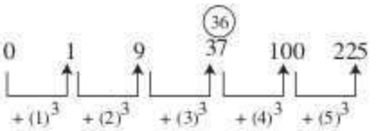

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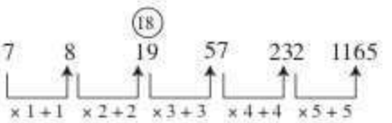

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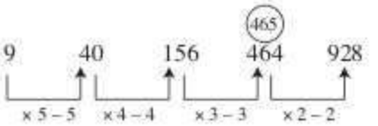

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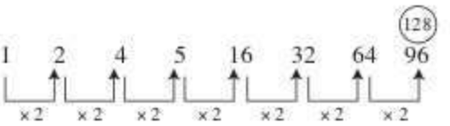

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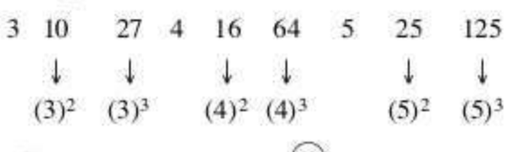

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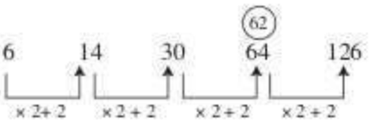

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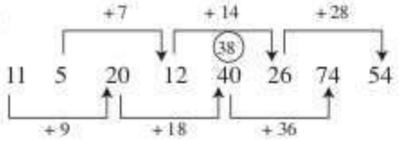

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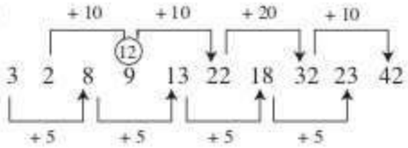

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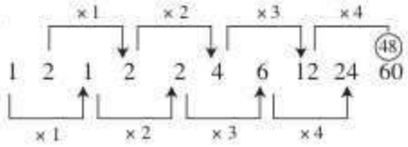
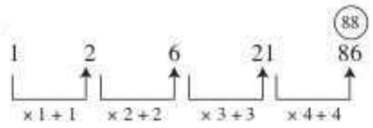


28. (D)



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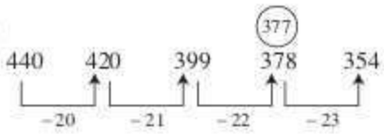

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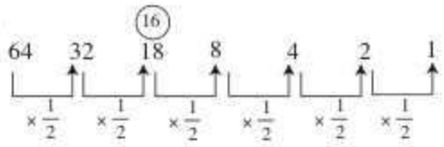

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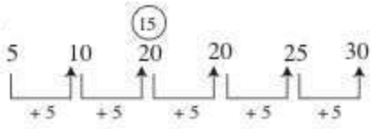

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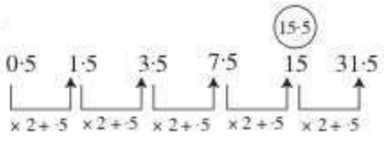
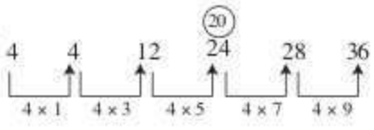
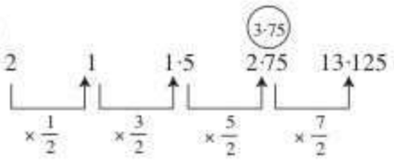


33. (B)



34. (C)



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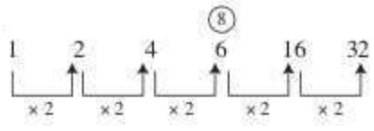

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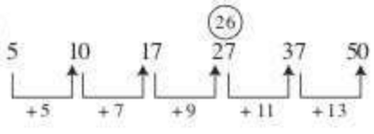

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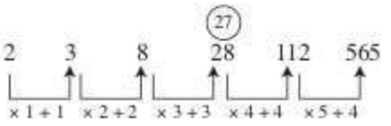
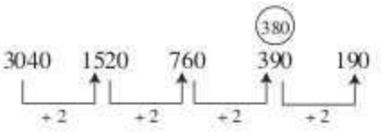


38. (C)



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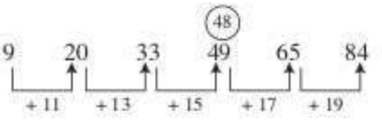

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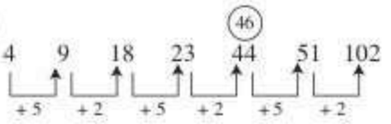
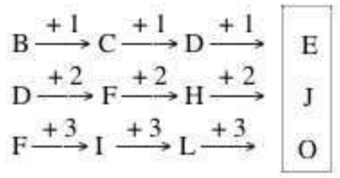
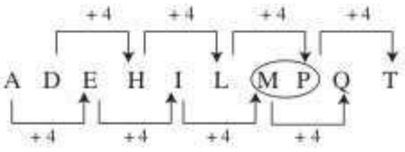


Exercise 3

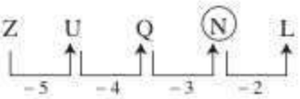
1. (A)



2. (C)



3. (B)



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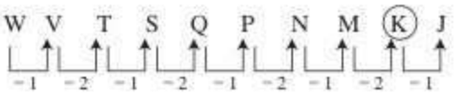

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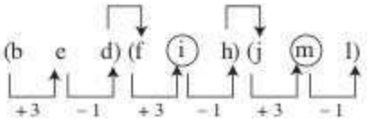

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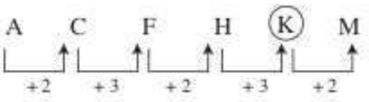

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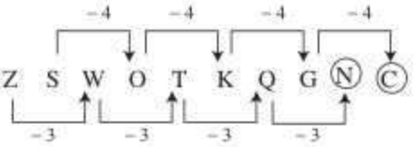

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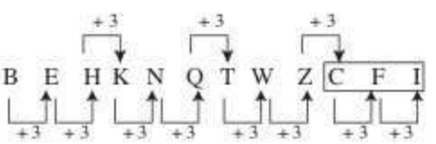


9. (A) F $\xrightarrow{+3}$ I $\xrightarrow{+3}$ L $\xrightarrow{+3}$ [O]
L $\xrightarrow{+2}$ N $\xrightarrow{+2}$ P $\xrightarrow{+2}$ [R]
P $\xrightarrow{+3}$ S $\xrightarrow{+3}$ V $\xrightarrow{+3}$ [Y]

10. (C) A $\xrightarrow{+6}$ G $\xrightarrow{+6}$ M $\xrightarrow{+6}$ [S] $\xrightarrow{+6}$ Y
Z $\xrightarrow[-6]{}$ T $\xrightarrow[-6]{}$ N $\xrightarrow[-6]{}$ [H] $\xrightarrow[-6]{}$ B

11. (A) c x f u i r ? (lo) o l r i
(−3, −3, −3, −3, −3) (+3, +3, +3, +3, +3)

12. (B) U O I (E) A
There are all vowels in reverse order.

13. (A) Z L X J V H T F (R) (D)
(−2, −2, −2, −2) (−2, −2, −2, −2)

14. (A) A $\xrightarrow{+3}$ D $\xrightarrow{+4}$ N $\xrightarrow{+5}$ M $\xrightarrow{+6}$ S $\xrightarrow{+7}$ [Z]
B $\xrightarrow{+5}$ G $\xrightarrow{+4}$ M $\xrightarrow{+7}$ T $\xrightarrow{+8}$ B $\xrightarrow{+9}$ [Y]
D $\xrightarrow{+7}$ K $\xrightarrow{+8}$ S $\xrightarrow{+9}$ B $\xrightarrow{+10}$ L $\xrightarrow{+11}$ [W]

15. (B) A B D G (K)
(+1, +2, +3, +4)

16. (E) J E L H O L S Q X W
(+3, +4, +5, +6) (+2, +3, +4, +5)

17. (E) L $\xrightarrow{+1}$ M $\xrightarrow{+1}$ N $\xrightarrow{+1}$ O $\xrightarrow{+1}$ [P]
X $\xrightarrow{-4}$ T $\xrightarrow{-4}$ P $\xrightarrow{-4}$ L $\xrightarrow{-4}$ [H]
F $\xrightarrow{+4}$ J $\xrightarrow{+4}$ N $\xrightarrow{+4}$ R $\xrightarrow{+4}$ [V]

18. (C) J $\xrightarrow{+1}$ K $\xrightarrow{-2}$ I $\xrightarrow{+3}$ [L] $\xrightarrow{-4}$ H $\xrightarrow{+5}$ M
2 $\xrightarrow{+2}$ 4 $\xrightarrow{+3}$ 7 $\xrightarrow{+4}$ [11] $\xrightarrow{+5}$ 16 $\xrightarrow{+6}$ 22
Z $\xrightarrow{-2}$ X $\xrightarrow{-2}$ V $\xrightarrow{-2}$ [T] $\xrightarrow{-2}$ R $\xrightarrow{-2}$ P

19. (A) M $\xrightarrow{+1}$ N $\xrightarrow{+1}$ O $\xrightarrow{+1}$ P $\xrightarrow{+1}$ [Q]
H $\xrightarrow{+1}$ I $\xrightarrow{+2}$ K $\xrightarrow{+3}$ N $\xrightarrow{+4}$ [R]
Z $\xrightarrow{-3}$ W $\xrightarrow{-3}$ T $\xrightarrow{-3}$ Q $\xrightarrow{-3}$ [N]

20. (C) D-4 F-6 H-8 J-10 [L-12] [N-14]
(+2, +2, +2, +2, +2) (+2, +2, +2, +2, +2)

21. (D) 2 $\xrightarrow{+5}$ 7 $\xrightarrow{+7}$ 14 $\xrightarrow{+9}$ 23 $\xrightarrow{+11}$ 34 $\xrightarrow{+13}$ [47]
Z $\xrightarrow{-1}$ Y $\xrightarrow{-1}$ X $\xrightarrow{-1}$ W $\xrightarrow{-1}$ V $\xrightarrow{-1}$ [U]
5 $\xrightarrow{+2}$ 7 $\xrightarrow{+2}$ 9 $\xrightarrow{+2}$ 11 $\xrightarrow{+2}$ 13 $\xrightarrow{+2}$ [15]

22. (E) K $\xrightarrow{-2}$ I $\xrightarrow{-2}$ G $\xrightarrow{-2}$ E $\xrightarrow{-2}$ [C]
M $\xrightarrow{+3}$ P $\xrightarrow{+3}$ S $\xrightarrow{+3}$ V $\xrightarrow{+3}$ [Y]
5 $\xrightarrow{+3}$ 8 $\xrightarrow{+3}$ 11 $\xrightarrow{+3}$ 14 $\xrightarrow{+3}$ [17]

23. (D) AB, BA, ABC, CBA, ABCD, [DCBA]
In each alternate term one next letter is increased.

24. (A) E $\xrightarrow{+2}$ G $\xrightarrow{+2}$ [I] $\xrightarrow{+2}$ K
H $\xrightarrow{+2}$ J $\xrightarrow{+2}$ [L] $\xrightarrow{+2}$ N
Y $\xrightarrow{-2}$ W $\xrightarrow{-2}$ [U] $\xrightarrow{-2}$ S

25. (D) B $\xrightarrow{+2}$ D $\xrightarrow{+2}$ [F] $\xrightarrow{+2}$ H
E $\xrightarrow{+2}$ G $\xrightarrow{+2}$ [I] $\xrightarrow{+2}$ K
H $\xrightarrow{+2}$ J $\xrightarrow{+2}$ [L] $\xrightarrow{+2}$ N

26. (E) A $\xrightarrow{+2}$ C $\xrightarrow{+2}$ E $\xrightarrow{+2}$ [G] $\xrightarrow{+2}$ I
T $\xrightarrow{-2}$ R $\xrightarrow{-2}$ P $\xrightarrow{-2}$ [N] $\xrightarrow{-2}$ L

27. (B) a c b d e (g)
(+2, +2, +2)

28. (E) DF CDF CDFH BCDFH BCDFHJ
(−1, +2, +2) (−1)

29. (A) The first letter of the term comes at the last place of the next term in the series.

30. (A) Z X (V) T R (P) N L J (H)
(−2, −2, −2, −2, −2, −2, −2, −2, −2)
F D (B)
(−2, −2, −2)

31. (A) A L F Q J U [M X] O Z
(+5, +4, +3, +2) (+5, +4, +3, +2)

32. (C) Y $\xrightarrow{-5}$ T $\xrightarrow{-5}$ O $\xrightarrow{-5}$ J $\xrightarrow{-5}$ [E]
B $\xrightarrow{+5}$ G $\xrightarrow{+5}$ L $\xrightarrow{+5}$ Q $\xrightarrow{+5}$ [V]
V $\xrightarrow{-2}$ T $\xrightarrow{-2}$ R $\xrightarrow{-2}$ P $\xrightarrow{-2}$ [N]

33. (D) W Z C F (I)
+3 +3 +3 +3

34. (C) b c f g j k (n)
+1 +3 +1 +3 +1 +3

35. (B) W V P O I H [B A] U T
−7 −7 −7 −7
−7 −7 −7 −7

36. (B) D $\xrightarrow{+4}$ H $\xrightarrow{+5}$ M $\xrightarrow{+6}$ S
E $\xrightarrow{+4}$ I $\xrightarrow{+5}$ N $\xrightarrow{+6}$ T
F $\xrightarrow{+4}$ J $\xrightarrow{+4}$ O $\xrightarrow{+6}$ U

37. (B) A A B D G K (P) V
+0 +1 +2 +3 +4 +5 +6

38. (D) B C Q P D E O N F G M L [H I]
−2 −2 −2 −2
+2 +2 +2
+2 +2 +2

39. (B) B $\xrightarrow{+1}$ C $\xrightarrow{+2}$ E $\xrightarrow{+3}$ H $\xrightarrow{+4}$ L $\xrightarrow{+5}$ Q
1 $\xrightarrow{\times 2}$ 2 $\xrightarrow{\times 2}$ 4 $\xrightarrow{\times 2}$ 8 $\xrightarrow{\times 2}$ 16 $\xrightarrow{\times 2}$ 32
X $\xrightarrow{-1}$ W $\xrightarrow{-1}$ V $\xrightarrow{-1}$ U $\xrightarrow{-1}$ T $\xrightarrow{-1}$ S

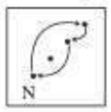
40. (A) 4 $\xrightarrow{+1}$ 5 $\xrightarrow{+2}$ 7 $\xrightarrow{+3}$ 10 $\xrightarrow{+4}$ 14 $\xrightarrow{+5}$ 19
E $\xrightarrow{+2}$ G $\xrightarrow{+2}$ I $\xrightarrow{+2}$ K $\xrightarrow{+2}$ M $\xrightarrow{+2}$ O
Z $\xrightarrow{-1}$ Y $\xrightarrow{-1}$ X $\xrightarrow{-1}$ W $\xrightarrow{-1}$ V $\xrightarrow{-1}$ U

Exercise 4

1. (B) aaa|bb|bb|ccc|ddd
2. (A) w**x**a|x**y**b|y**z**d|a**de**
3. (D) def**g**|ef**gh**|fg**hi**/**g**
4. (B) a**d**ula**c**ula**e**ula**b**ula**f**alaa
   /a appears after two letters.
5. (B) **bc**a|ca**b**|ab**c**|b**ca**
6. (B) **ab**ab**a**b**a**b**ab**
7. (C) ab**baa**b|abbaa**b**
8. (A) alaaabalaaaaba
9. (B) **a**bala**b**alabala**b**a
10. (C) **ba**babb|ba**bab**b
11. (B) a**b**ba|abba|abb**a**
12. (D) rtsr|rtsr|rtsr|rtsr
13. (B) BE**H**K**N**Q|BB**E**EHH**K**KNNQQ
14. (B) APQM|**AP**QM|AP**Q**M|AP**QM**
15. (D) P**Q**QL|P**Q**QL|**PQQ**L|PQQ**L**
16. (D) c**a**baa**c**la**c**a**b**calcaba**a**c**a**c**a**bca
17. (A) **a**bbca**c**bcca**b**ac**aa**b**c**b
18. (A) a**a**bcc**b**b**c**aaccab**b**aab**c**c
19. (C) ab**c**aab**c**aabb**c**aabb**c**c
20. (B) **b**bcca**c**c**a**a**c**ca**b**baab**c**c
21. (A) P**PC**A**G**PPC**A**G**PPC**A**G**
22. (B) RA**R**P**R**AR**P**RAR**P**
23. (A) gfe**ii**g**f**e**ii**g**f**e**ii**g**f**e**ii**
24. (C) abc**dd**ab**c**d**a**b**b**cda
25. (B) mnonopqopqrs**pqrst**
26. (C) **abdd**ha**b**d**dh**
27. (B) **R**SRR**S**RR**S**RRS**R**
28. (B) abc**d**a**b**cdabc**d**a**b**cd
29. (C) **abc**b**c**aca**ba**bc
30. (B) ba**ab**b**a**ab**b**a**ab**
31. (A) X**XY**YZX**X**Y**YZ**XX**Y**YZ
32. (A) **a**ab**b**a**a**a**a**b**b**a**a**a**a**b
33. (C) a**bcc**ab**c**c**a**b**c**c**a**bab
34. (B) **acb**b**a**c**b**cb**a**c**ac**b**b**acac
35. (D) ab**c**b**c**a**c**a**b**a**b**c**b**c**a**
36. (D) a**a**bb**c**c**a**a**b**b**c**c**a**abbcc
37. (B) abc**a**ab**c**a**a**b**b**c**a**a**b**b**c**c**a**
38. (A) ab**b**a**a**a**b**b**b**a**a**a**a**b**b**b**b**a
39. (D) abb**a**b**a**a**b**a**b**b**a**b**a**a**b**a
40. (A) bc**c**b**b**c**c**b**b**c**c**b

Exercise 5

1. (A) Shifting of designs is shown below :



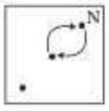
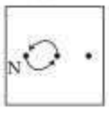
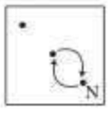
From Pf_1 to Pf_2 From Pf_2 to Pf_3
From Pf_3 to Pf_4 From Pf_4 to Pf_5
From Pf_5 to Pf_6

Here N shows new design.

2. (B) In each subsequent figure all the designs shift from one diagonal to another diagonal. Besides this, shifting of designs in each subsequent figure takes place as shown below :

3. (A) Here $Pf_1 = Pf_3 = Pf_5$
   and $Pf_2 = Pf_4$
   $\therefore$ $Pf_4 = Pf_6$

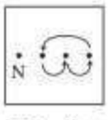
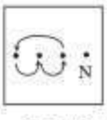
4. (E) In each subsequent figure set of all the three designs moves through 45° clockwise. Besides this, shifting of designs is shown below :

Pf_1 to Pf_2 Pf_2 to Pf_3 Pf_3 to Pf_4

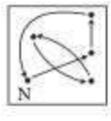
Pf_4 to Pf_5 Pf_5 to Pf_6

5. (D) In each subsequent figure each design is shifting one side clockwise. Besides, from the design ☾ each next design moves through 180°.
6. (E) In each alternate figure arrow is shifting one side anticlockwise and it moves also through 90° clockwise. Besides, from Pf_1 to Pf_4 the design ◭ moves through 90° clockwise and then reverses. The same change is from Pf_2 to Pf_5 and Pf_3 to Pf_6.
7. (C) In each subsequent figure the design O shifts $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3 and $3\frac{1}{3}$ sides respectively anticlockwise and the line inside it moves 90° each time. The design ⌊ shifts one side each time anticlockwise and in alternate figure it reverses. The design ∠ shifts $1\frac{1}{2}$ sides each time anticlockwise and also moves through 90° anticlockwise each time. The design × shifts $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3 and $3\frac{1}{2}$ sides clockwise and in each time it changes to + and vice versa.
8. (C) In each subsequent figure all the three designs shift half side. Besides, the designs are shifting as shown below :

From P.F. (1) to (2) From P.F. (2) to (3)
From P.F. (3) to (4) From P.F. (4) to (5)
From P.F. (5) to (6)

9. (A) In each problem figure the design at the end of the line is different. Besides, P.F. (1) and (5) are same. Hence, P.F. (2) and P.F. (6) will also be same.
10. (C) In the first segment of the given diagram, there are four circles. Out of these four circles, the upper left circle is shaded with $\frac{1}{8}$ part and rest three circles are blank. In the subsequent figure, the shaded portion of first left upper circle is increased by $\frac{1}{8}$ more and rotates 45° anticlockwise and second lower left circle is shaded with $\frac{1}{8}$ part. This process is repeated *i.e.*, increment of $\frac{1}{8}$ part each time and rotation of 45° anticlockwise. For the answer figure, the alternative (C) fulfils these conditions.
11. (E) In each subsequent P.F. main design moves through 45° clockwise. Besides, outer two designs shift to the next end. From P.F. (1) to (2) out of then two designs one takes new shape while from P.F. (2) to (3) both the designs take a new shape. This order changes continues.
12. (A) From Pf_1 to Pf_2 at the upper right corner a new design takes place and all the rest designs shift a definite order.
13. (B) In each alternate figures two designs interchange their places while each of the remaining designs shifts one place clockwise out of which one takes a new shape.
14. (D) From Pf_1 to Pf_2 each design shifts one place anticlockwise and F moves also through 180° while the design the left takes a new shape. The same changes are from Pf_3 to Pf_4. Hence, from Pf_5 to answer the same changes will take place.
15. (A) Small lines are decreased in the order of 1, 2, 3, 4 and 5 in anticlock direction in each subsequence figure while each time one line is added.
16. (B) In each subsequent figure the lines are decreased in order of $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, and $2\frac{1}{2}$ respectively clockwise.
17. (C) From Pf_1 to Pf_2 the design attached to upper shifts to the lower line while a new design takes place at the upper line. The same change is from Pf_3 to Pf_4. Hence, the same change will take place from Pf_5 to answer figure.
18. (A) In each subsequent P.F. the design ▲ at one end of the line, reverses and shifts a little to the back. The design C reverses in next P.F. and shifts to forward in alternate figures. Besides, the line at the right end, moves through 90° clockwise. Hence, at 6th place there will be answer figure (A).
19. (E) From P.F. (1) to (2) the white semicircle shifts to the first end of the next side and one black triangle ▲ increases. From P.F. (2) to (3) the white semicircle shifts to next end of same side while the design ▲ shifts to end of the next side and a new ▲ increases at its place from P.F. (3) to (4) the white semicircle shifts the next side and a new white semicircle is formed at its place and a black triangle shifts one place onward. The same order of change is repeated. Hence, at 6th P.F. there will be answer figure (E).
20. (E) From Pf_1 to Pf_2 the designs interchange positions and ↑ moves through 90° clockwise while other design moves through 90° anticlockwise. The same changes are from Pf_3 to Pf_4. Hence, the same changes will be from Pf_5 to answer figure.
21. (D) From Pf_1 to Pf_2 the designs are shifting in the following ways :



Hence, the same changes will be from Pf_1 to answer figure.

22. (A) In each subsequent figure the design is moving through 45°, 90°, 45°, 90° and 45° respectively clockwise.

23. (B) In each subsequent figure the arcs are increasing by 1 and 2 respectively anticlockwise but when two arcs increase they do not increase jointly but one at each end.

24. (E) From Pf_1 to Pf_2 the bottom design shifts to top and then reverses. The design from the top shifts in the middle and then reverses while the design from the middle shifts to bottom and takes a new shape. The same changes are from Pf_3 to Pf_4. Hence, there will be same changes from Pf_5 to answer figure.

25. (C) In the first segment of the given figure. There is a figure which has a combination of four triangles and one of the triangles which lies on left lower side is partly thin shaded. There is a horizontal line on its upper side. In the next figure, this figure rotates 90° clockwise and shaded portion transfers to upper left triangle and it becomes thick. In third figure, the figure again rotates 90° clockwise, shaded portion thic to thin and its position changes left upper to right lower. For the final answer figure, 'C' fulfils the conditions which have been adopted in previous process.

26. (E) From P.F. (1) to (2) four lines are increased. From P.F. (2) to (3) three lines are increased. The same order of changes is repeated. Hence, of P.F. (6), there will be answer figure (E).

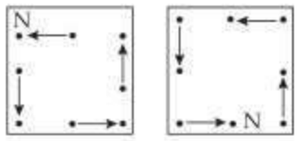
27. (D) In each subsequent P.F. the line is increased by 1/2 and 1 respectively. Besides the whole design is moving through one side anticlockwise. Hence, at P.E. (6) there will be answer figure (D).

28. (E) In each subsequent figure the designs are reversing in order of 1, 2, 3, 4 and 1 respectively.

29. (B) From P.F. (1) to (3) the design shifts 1/2 distance along the diagonal and one acute angle is increased. From P.F. (2) to (4) the design shifts 1/2 distance along the diagonal and one right angle is increased. From P.F. (3) to (5) both designs shift 1/2 distance along the diagonal and one obtused angle is increased. Hence, from P.F. (4) to (6) both the designs will shift 1/2 distance along the diagonal and one acute angle will increase. Hence, at P.F. (6) there will be answer figure (B).

30. (E) In each subsequent figure triangular design moves through 90° anticlockwise and one side is decreased in clockwise direction. Besides from P.F. (1) to (2) two lines are increase in upper design. From P.F. (2) to (3) three lines are increased. The order of change is repeated. Hence, at P.F. (6) there will be answer figure (E).

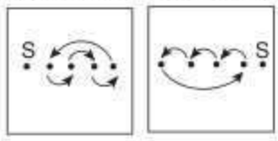
31. (B) Changing of places of the designs is shown ahead and at the place of N a new design comes—



(1) to (2) (2) to (3)
(3) to (4) (4) to (5)
(5) to (6)

32. (A) In each subsequent figure design is shifting half side along diagonal. Besides it is also moving through 90° and 45° respectively clockwise.

33. (D) In each subsequent figure the whole figure is moving through 45° anticlockwise and the designs are changing their positions as shown below and at the place of S, the same design remains—

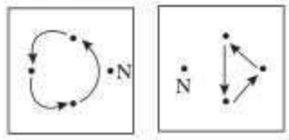


(1) to (2) (2) to (3)

34. (B) In each subsequent figure the design ∧_ reverses after shifting one side anticlockwise. Second design from (2) to (3) and from (3) to (5) moves through 90° clockwise and from (2) to (4) and (4) to (6) moves through 90° clockwise and each time curve part reverses.

35. (E) From PF(1) to PF(2) the design shifts $\frac{1}{2}$ side anticlockwise and takes a new shape. Besides one more new design appears ahead of the previous one. From PF(2) to PF(3) this new design shifts half side anticlockwise and two new designs appear one before and the other after this design. From PF(3) to PF(4) two designs shifts $\frac{1}{2}$ side each anticlockwise and two new designs one before and one after appear. The same order of change is repeated.

36. (C) The designs are changing their places as shown below and a new design comes at the place of N—



(1) to (2) (2) to (3)
(4) to (5) (3) to (4)
(5) to (6)

37. (D) From PF(1) to PF(2) two designs are interchanging their places and one of them is moving through 90° clockwise. The same changes take place from PF(3) to PF(4) and PF(5) to PF(6).

38. (A) In each subsequent figure the designs are increasing by 2, 3, 4, 5 and 6 respectively and the design | ⊃| < is repeating.

39. (B) In each subsequent figure a previous design disappears and two more designs appear clockwise.

40. (C) In each subsequent figure a side of hexagonal misses at the direction of clockwise leaving 2 and 3

side respectively and inside triangle slides two sides forward at the same direction and a more new triangle add next time.

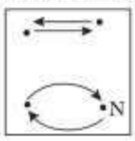
41. (A) In each subsequent figure leaving leaves 1, 2, 3, 4 and 5 clockwise respectively the leaves 2, 3, 1, 2 and 3 are becoming small respectively.

42. (E) From PF(1) to PF(2) the design shifts $\frac{1}{2}$ side and then moves through 90° anticlockwise. Besides, one more new design is increased. The same changes are from PF(3) to PF(4) and from PF(5) to PF(6).

43. (D) From PF(1) to PF(2) uppermost design shifts in the middle after recovering while the middle design shifts to bottom. The design at the bottom shifts to uppermost and takes a new shape. The same changes are from PF(3) to PF(4) and from PF(5) to PF(6).

44. (C) From PF(1) to PF(2) three designs are reversed. From PF(2) to PF(3) all the four designs are reversed. The same order of change is repeated.

45. (A) The designs are changing their places as shown below and a new design comes at the place of N—



(1) to (2)
(3) to (4)
(5) to (6)

46. (E) In each subsequent figure the design shifts one side anticlockwise and one more line is increase at left to it.

47. (B) From PF(1) to PF(2) two designs are interchanging their places while the third design is shifting one place clockwise. The same change is taking place from PF(3) to PF(4) and from PF(5) to PF(6).

48. (C) From PF(1) to PF(2) outer design shifts two sides anticlockwise. The inner design comes out and a new design takes place inside the figure. The same change takes place from PF(3) to PF(4) and from PF(5) to PF(6).

49. (B) In each subsequent figure each of the four designs shifts one side anticlockwise and the design which reaches at upper left corner, reverses.

50. (A) In each subsequent figure one Δ increases and after each two triangles are inverted.

51. (D) In each subsequent figure the design is moving through 135° clockwise and 45° anticlockwise respectively.

52. (A) In each subsequent figure the design is moving through 45° clockwise. Besides, half petal is increasing ahead and before respectively.

53. (B) From PF(1) to PF(2) the design moves through 45° anticlockwise and a new design takes place at the place of previous design. The same change takes place from PF(3) to PF(4) and from PF(5) to PF(6).

54. (C) From PF(1) to PF(2) the whole design moves through 135° anticlockwise and becomes along diagonal. The same change takes place from PF(3) to PF(4) and from PF(5) to PF(6).

55. (E) In each subsequent figure the designs are increasing by 2, 3 and 1 respectively in a certain order.

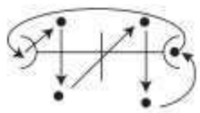
56. (B) In each subsequent figure both the designs are interchanging their places. The lower design after going to upside, moves through 90° clockwise while the upper after shifting takes a new shape.

57. (B) In each subsequent figure three and two new designs are increasing respectively and besides each design makes a pair.

58. (E) From PF(1) to PF(3) and from PF(3) to PF(5) the whole design moves through 90° anticlockwise while the inner line coming out from in and vice versa shifts two side clockwise. From PF(2) to PF(4) and from PF(4) to PF(6) whole design moves through 90° anticlockwise. Besides the outer line shifts one side clockwise while the inner line shifts two sides anticlockwise.

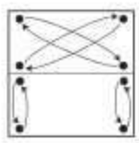
59. (A) In each subsequent figure the bigger design moves through 45° and 90° respectively anticlockwise while the smaller design moves through 45° clockwise.

60. (D) The designs are shifting their places as shown below—

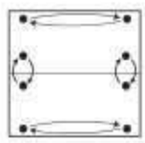


61. (E) In second figure from first all the four designs or letters rotate 90° clockwise. In third figure from second the first and second letters from left change their places mutual and rest of two remain same as before. These two changing sequences continue further also respectively.

62. (B) In each subsequent figure the designs slide as follows :

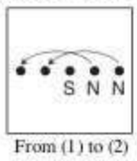


From (1) to (2)
From (3) to (4)
From (5) to (6)

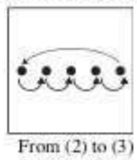


From (2) to (3)
From (4) to (5)

63. (D) In each subsequent figure the letters slide as follows and the new letters come at the place of 'N' and the same letter remain at the place of 'S' :

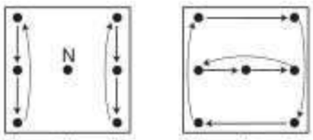


From (1) to (2)
From (3) to (4)
From (5) to (6)



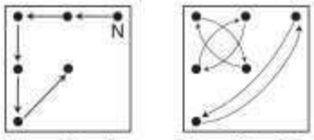
From (2) to (3)
From (4) to (5)

64. (E) In each subsequent figure the designs slide as follows and a new design forms at the place of 'N' :



From (1) to (2) From (2) to (3)
From (3) to (4) From (4) to (5)
From (5) to (6)

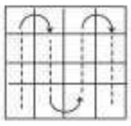
65. (C) In each subsequent figure the designs slide as follows and a new design forms at the place of 'N' :



From (1) to (2) From (2) to (3)
From (3) to (4) From (4) to (5)
From (5) to (6)

66. (E) From problem figure 1 to 2 and 3 to 4, all designs reversing horizontally move one step ahead downward and the design at the bottom reaches to the top. Using the same rule from problem figure 5 to 6, the answer figure (E) is obtained.

67. (C) In each successive problem figure designs move in the following order and each design moves 3 steps ahead, while the design itself moves each time to the next arm



in clockwise direction. Thus, the answer figure (C) is obtained.

68. (D) From problem figure 1 to 2 and 3 to 4, designs move one step ahead anticlockwise, and takes changes as below—

S → moves 90° anticlockwise

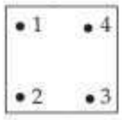
◒ → moves 90° anticlockwise and

7 → rotating 45° anticlockwise, reverses vertically

⌂ → rotates 90° anticlockwise

Using the same rule from problem figure 5 to 6, the answer figure (D) is obtained.

69. (B) In each successive problem figure, the small semi-circle changes its position as following :



Semi-circle 1. Rotates through 90° anticlockwise in each next P.F.

Semi-circle 2. From 1 to 2 reverses then from 2 to 3 rotates through 90° clockwise, again the same rule continues.

Semi-circle 3. From 1 to 2 rotates 90° anticlockwise then from 2 to 3 reverses, again the same rule continues.

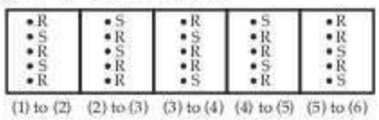
Semi-circle 4. From 1 to 2 reverses then from 2 to 3 rotates 90° clockwise again the same rule continues.

70. (E) From problem figure 1 to 2, whole design rotates through 180° and a new leaf reproduces and the inner half part of the outer leaves and outer half part of the inner leaves become black. From problem figure 3 to 4, whole design rotates through 180° and new leaf reproduces. But now outer half part of outer leaves and inner half part of the inner leaves become black, so now alike the problem figure 1 to 2, there will be changeed from problem figure 5 to 6. Thus, the answer figure (E) is obtained.

71. (B) In each subsequent figure, 2, 1, 2, 1 and 2 parts out of different parts on the design are becoming more shaded in anticlockwise direction and 5, 4, 5, 4 and 5 parts are becoming shaded from frontside in the same direction from last shaded part each time with this also.

72. (E) In each subsequent figure the three designs slide half-half side in this sequence '⇄' and the designs of frontside and backside rotate 90° clockwise each time and the middle design rotates 90° anticlockwise.

73. (A) In each subsequent figure the five designs come after reversing and remain same on the same place as follows, where meaning of 'R' is reversing and meaning of 'S' remain same—



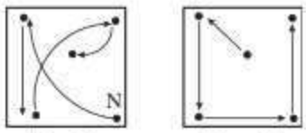
74. (D) In each subsequent figure the inside designs of the design of pentagon are sliding as follows—

The design '○' slides one-one side anticlockwise two times then comes on the same last one place and then slides similarly.

The design '▲' comes after sliding one side clockwise each time. The design '■' slides three times one side anticlockwise and then slides two side clockwise. So now this will slide one side in next figure.

On the basis of above three designs the next correct answer figure will be (D).

75. (C) In each subsequent figure the designs are sliding as follows and a new design comes at the place of N—



(1) to (2) (2) to (3)
(3) to (4) (4) to (5)
(5) to (6)

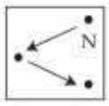
76. (C) In each subsequent figure a new design formed after rotating in anticlockwise direction at upper left corner and a design rotates 90° clockwise and then anticlockwise respectively and next design rotates 45°–45° clockwise and then anticlockwise respectively. These all designs shift also half-halfside clockwise each time.

77. (E) In each subsequent figure the design of upper left corner rotates 90° and 135° clockwise respectively, the design of upper right corner rotates 90°

and 135° anticlockwise respectively, the design of lower right corner rotates 135° and 90° clockwise respectively and the design of lower left corner rotates 90° and 135° anticlockwise respectively.

78. (B) In each subsequent figure the half shaded leaf rotates 45° and 90° clockwise respectively and the shaded part shifts in the rest of half part also and one by one a new leaf joins forwardside and backward-side of it respectively with the original change also.

79. (B) In the second figure from first the designs are sliding as follow and a new design is forming at the place of N—



The similar change is going on in fourth and sixth figures from third and fifth figures respectively.

80. (E) In each subsequent figure the designs '↧' and 'Y' from the left one by one receptively and reverse or remain same after shifting one place right side. The design '↧' reverses one time and remains same two times and the design 'Y' reverses each time and the first most design shifts right from left after forming new as follows—

↑ ⇒ ⅄ ⇒ ↓ ⇒ ⅄ ⇒ ↑ ⇒ Y

81. (B) In each subsequent figure the two new designs form from left to right and upward to downward respectively.

82. (A) In each subsequent figure the pairs of two lines are forming in horizontal and vertical position from middle to outerside respectively.

83. (E) In each subsequent figure the group of five designs rotate 90° clockwise and the designs one by one from one side to other side reverse respectively.

84. (E) In each subsequent figure the three designs shift anticlockwise one part one time and the three designs come at opposite side from itself position next time. Hence, these two sequences continue further similarly respectively.

85. (D) In each subsequent figure the letters one by one from right end to left end remain still and rest of letters in the form of pairs change their places mutual respectively.

86. (C) In each subsequent figure the design placed in all part inside of main design form after shifting one part anticlockwise in a certain sequence.

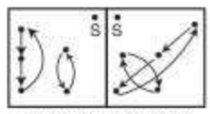
87. (A) In each subsequent figure one half shaded triangle increases and half shaded part comes at other half side each time in the all triangles.

88. (B) In second figure from first, in fourth figure from third and in sixth figure from fifth the different three-three designs change their places mutual.

89. (C) In each subsequent figure the pair of two lines is missing from lower and backside.

90. (B) In each subsequent figure the designs of upper left and lower right change their places mutual and the design of middle rotates 90° anticlockwise.

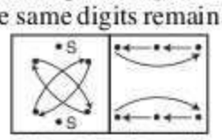
91. (B) In each subsequent figure the designs slide as follows and the same designs remain at the place of 'S' :



(1) to (2) (2) to (3)
(3) to (4) (4) to (5)
(5) to (6)

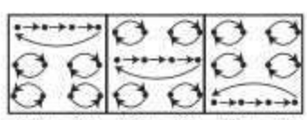
92. (E) In each subsequent figure the design '↓' shifts half side anticlockwise and rotates 90° anticlock-wise after remaining two times same. The design 'P' rotates 90° clockwise and slides like this ' ' at the middle of the figure and upper right and lower left corners form new designs respectively.

93. (D) In each subsequent figure the digits slide as follows and the same digits remain at the place of 'S' :



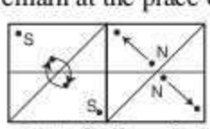
(1) to (2) (2) to (3)
(3) to (4) (4) to (5)
(5) to (6)

94. (D) In each subsequent figure the designs slide as follows :



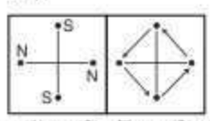
(1) to (2) (2) to (3) (3) to (4)
(4) to (5) (5) to (6)

95. (C) In each subsequent figure the four vertical lines form from lower left to upper right and from upper right to lower left and rest of designs slide as follows and the new designs form at the place of 'N' and the same designs remain at the place of 'S' :



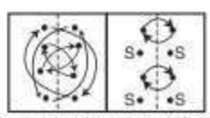
From (1) to (2) From (2) to (3)
From (3) to (4) From (4) to (5)
From (5) to (6)

96. (A) In each subsequent figure the four designs on the main design '+' slide as follows and the new designs form at the place of 'N' and the same designs remain at the place of 'S' :



From (1) to (2) From (2) to (3)
From (3) to (4) From (4) to (5)
From (5) to (6)

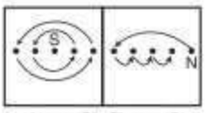
97. (C) In each subsequent figure the designs slide as follows and the same designs remain at the place of 'S' :



From (1) to (2) From (2) to (3)
From (3) to (4) From (4) to (5)
From (5) to (6)

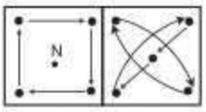
98. (A) In the second figure from first the three designs of right side form at upper, middle and lower left after rotating 90° anticlockwise and the new designs form at the upper, middle and lower right side. In third figure from second the all six designs form after rotating 90° anticlockwise. Hence, these both changing sequences continue also further respectively.

99. (B) In each subsequent figure the letters of word slide as follows and the new letters form at the place of "N' and the same letters remain at the place of 'S' :



From (1) to (2) From (2) to (3)
From (3) to (4) From (4) to (5)
From (5) to (6)

100. (E) In each subsequent figure the designs slide as follows and the new designs form at the place of 'N' :



From (1) to (2) From (2) to (3)
From (3) to (4) From (4) to (5)
From (5) to (6)

101. (D) From problem figure I to II both the upper designs interchange their places while the lowermost design revrses. From problem figure II to III both the lower designs interchange their places while the uppermost design reverses. The same order of change is repeated.

102. (B) In each problem figure the design is closed and different.

103. (C) From I to III each subsequent figure the whole design shift half side to the right. From IV to VI the same rule is repeated. Besides, the designs shift as shown below and new design comes at the place of N—

I to II II to III
III to IV IV to V
V to VI

104. (A) From problem figure I to II the design reverses and a new design is increased. From problem figure II to III both the designs reversed and a new design is increased. Problem figure III to IV, IV to V and V to VI both the lower designs reverse while a new design is increased.

105. (E) In each subsequent figure the design moves through 45°, 90°, 135°, 180° and 225° respectively anticlockwise. In all other respects I & IV, II & V and III & VI are same.

106. (A) In each subsequent figure upper side design comes downward and a inverted design comes at upper side.

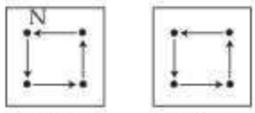
107. (E) From problem figure I to II the design at the left and takes a new shape. From problem figure II to III the design at the right and takes a new shape. From problem figure III to II second design from the left end takes a new shape. The same order of change continues.

108. (D) Problem figure I and V are same. Hence, problem figure II and VI will also be same.

109. (B) From problem figure I to II the upper design shifts to the center along the diagonal after moving through 90° clockwise while the design from the centre shifts to the left lower corner after moving through 90° anticlockwise. From problem figure II to III the design from the centre shifts to lower right corner after moving through 90° clockwise while the lower design shifts to upper right after moving through 90° anticlockwise. The same order is repeated.

110. (E) In each subseqent problem figure the design is shifting $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2 and $2\frac{1}{2}$ sides respectivley clockwise and is changing from white to black and *vice-versa*.

111. (D) The designs are changing their places as shown below and a new design comes at the place of N—



I to II II to III
III to IV IV to V
V to VI

112. (C) In each subsequent problem figure the design ↑ shifts $\frac{1}{2}$ and 1 side respectively after moving through 90° anticlockwise.

113. (A) In each subsequent problem figure one line is increasing clockwise.

114. (B) In each alternate problem figure one line is increasing and also moves one line clockwise.

115. (B)

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Coding-Decoding

Something said in a secret way is known as **Coding** and the conversion of the secret in exact meaning is known as **Decoding**. For example if the code of Ram is Boy then Boy is the code and Ram is decode.

Various types of questions which are generally asked in the exam.

Example 1. **Simple Code**

A	B	C	H	T	L	P	R	M	D
0	1	2	7	8	3	5	9	4	6

On the basis of the above series what is code of RAM ?

Solution : Code for R → 9

„ „ A → 0

and „ „ M → 4

Hence code of RAM is 904.

Example 2.

Code on the basis of position number

If the code of RAM is 32, then what is the code of MAN ?

Solution : We know the position number in the English alphabet of

R = 18

A = 1

and M = 13

∴ RAM = 18 + 1 + 13 = 32

Similarly MAN = 13 + 1 + 14 = 28

∴ Code of MAN = 28

Example 3. **Code on the basis of symbols**

If code of RAM is ❋ Δ □ and the code of MAN is □ Δ $ then what is the code of MAR ?

Solution : Code of RAM = ❋ Δ □

and Code of MAN = □ Δ $

∴ Code of A = Δ

and the Code of M = □

∴ Code of MAR = □ Δ ❋

Example 4. **Code on the increasing order**

If RAM : SBN then LAMP : ?

Solution :

As			Similarly		
R	$\xrightarrow{+1}$	S	L	$\xrightarrow{+1}$	M
A	$\xrightarrow{+1}$	B	A	$\xrightarrow{+1}$	B
M	$\xrightarrow{+1}$	N	M	$\xrightarrow{+1}$	N
			P	$\xrightarrow{+1}$	Q

∴ Code of LAMP is MBNQ.

Example 5. **Code on the decreasing order**

If RAM : QZL then LAMP : ?

Solution :

As			Similarly		
R	$\xrightarrow{-1}$	Q	L	$\xrightarrow{-1}$	K
A	$\xrightarrow{-1}$	Z	A	$\xrightarrow{-1}$	Z
M	$\xrightarrow{-1}$	L	M	$\xrightarrow{-1}$	L
			P	$\xrightarrow{-1}$	O

∴ Code of LAMP is KZLO

Example 6.

Code on the combined problem of increase and decrease

If RAM : TYO then LAMP = ?

Solution :

As			Similarly		
R	$\xrightarrow{+2}$	T	L	$\xrightarrow{+2}$	N
A	$\xrightarrow{-2}$	Y	A	$\xrightarrow{-2}$	Y
M	$\xrightarrow{+2}$	O	M	$\xrightarrow{+2}$	O
			P	$\xrightarrow{-2}$	N

∴ Code of LAMP is NYON

Example 7. **Code on the basis of reverse order**

If RAM : IZN then LAMP :

Solution : Here we see the position number of R in the English alphabet is 18 and the position number of I in the English alphabet is also 18 in the reverse order. Similar is the case for all the other letters.

	18	1	13		9	26	14	
	R	A	M	:	I	Z	N	
∴	12	1	13	16	15	26	14	13
	L	A	M	P	: O	Z	N	K

Hence code of LAMP is OZNK

Example 8.

Code on the basis of Change in place

(A) If MARCH : AMRHC then BARKS : ?

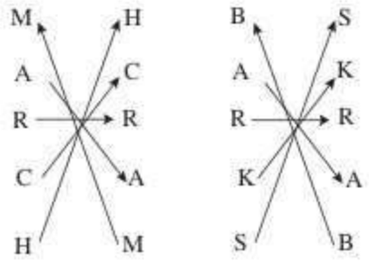
Solution :

As	Similarly
M → A, A → M	B → A, A → B
R → R	R → R
C → H, H → C	K → S, S → K

Hence code of BARKS is ABRSK.

(B) In MARCH : HCRAM then BARKS : ?

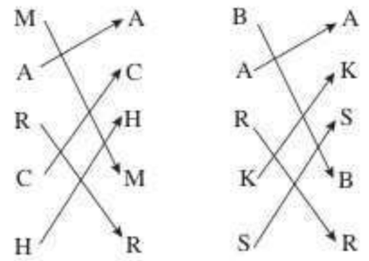
Solution : As Similarly



Hence code of BARKS is SKRAB.

(C) If MARCH : ACHMR then BARKS : ?

Solution : As Similarly



Hence code of BARKS is AKSBR.

Example 9. **Code on the basis of sentence**

(A) If in a code nik pit tik means Ram is happy, tik chik lik means. He is good and mit nik fik means Ram was thick then what is code for 'is' ?

Solution : Note—In such questions it is not necessary that the words and their codes are given in the same order.

(1) nik pit tik : Ram is happy.

(2) tik chik lik : He is good.

(3) mit nik fik : Ram was thick.

On comparing (1) and (2) we get the code of 'is' is tik.

(B) If 'sky' is called 'red', 'red' is called 'fire', 'fire' is called 'water', 'water' is called 'sindur' and 'sindur' is called 'colour' then what do we drink after food ?

Solution : (new name)

sky ⟶ red
red ⟶ fire
fire ⟶ water
water ⟶ sindur
sindur ⟶ colour

Since we drink water after food and the new name for water is sindur. Hence we drink sindur after food.

Exercise 1

Directions—(Q. 1–10) In a certain language the letters are coded as follows :

S	B	C	P	N	E	O	H	R	M
0	9	3	7	1	6	4	8	5	2

Find the code of each word in each of the following questions :

1. NOSER
   (A) 67859 (B) 14065
   (C) 14056 (D) 14506
   (E) 14605
2. PROSE
   (A) 75496 (B) 75403
   (C) 75406 (D) 75046
   (E) 70456
3. HORSE
   (A) 84504 (B) 84506
   (C) 85406 (D) 84507
   (E) 89504
4. PORSB
   (A) 74503 (B) 74505
   (C) 74506 (D) 74509
   (E) 74590
5. COBRN
   (A) 34956 (B) 34596
   (C) 34695 (D) 34951
   (E) 31594
6. MORBH
   (A) 24597 (B) 24578
   (C) 24598 (D) 24958
   (E) 24859
7. SEROM
   (A) 06542 (B) 06452
   (C) 06524 (D) 06254
   (E) 06425
8. HORNS
   (A) 84519 (B) 84510
   (C) 84518 (D) 84517
   (E) 84516
9. BERMN
   (A) 96520 (B) 96528
   (C) 96521 (D) 96512
   (E) 96152
10. NORMB
    (A) 14529 (B) 14259
    (C) 14629 (D) 91426
    (E) 13254

Directions—(Q. 11–15) Study the following information carefully :

1	2	3	4	5	6	7	8	9	0
A	B	J	I	H	C	D	E	G	F

Following conditions are to be observed :

(i) If the first number is an odd then it is to be coded as X.

(ii) If the last number is an even then it is to be coded as Y.

(iii) If the either 4 or 9 is in between the number then it is to be coded as Z.

Applying these conditions, find the answer of each question.

11. What is the code of 56728 ?
(A) XCBED (B) YCDEB
(C) YCDBE (D) XCDBE
(E) None of these

12. What is the code of 245376 ?
(A) BZHDJY (B) BZHJDY
(C) BZHJDC (D) BZHJDX
(E) None of these

13. What is the code for 987654 ?
(A) XEDCHY (B) XEDCHI
(C) IHGFEZ (D) ZHGFEZ
(E) None of these

14. What is the code for 274601 ?
(A) BDZCFA (B) BDZFCA
(C) BDICFY (D) BDICAF
(E) None of these

15. What is the code for 398756 ?
(A) XGEDHC (B) XGEDHY
(C) JGEDHY (D) XGEHDY
(E) None of these

Directions—(Q. 16–20) The following numbers are coded as follows :

Digits	7	3	5	0	2	1	6	4	9	8
Code	N	H	L	T	F	D	R	Q	G	P

Following conditions are also to be observed :
(i) If first digit is even and the last digit is odd then they are to be coded as $ and @ respectively.
(ii) If first digit is odd and the last digit is even they are to be coded as # and £ respectively.
(iii) If zero is preceded and followed by an odd digit then zero is to be coded as ✱.
(iv) If zero is preceded and followed by an even digit then zero is to be coded as ↑.
(v) Zero is not to be considered as even or odd.

16. How will the number 1375490 be coded ?
(A) DHNLQGT (B) #HNLQG£
(C) DHNQG (D) £HNLQG#
(E) None of these

17. The code of which of the following number is $QRL✱H@ ?
(A) 8456037 (B) 8465032
(C) 6475031 (D) 6460539
(E) None of these

18. The code of which of the following number is QLP↑RNT ?
(A) 4570680 (B) 4780650
(C) 6580470 (D) Data are insufficient
(E) None of these

19. How will the number 7620486 be coded ?
(A) £RF↑QP# (B) #RF↑QP£
(C) #RF✱QP£ (D) £RF✱QP#
(E) None of these

20. How will the number 36250098 be coded ?
(A) #RFL✱✱G£ (B) $RFLTTG£
(C) #RFLTTG£ (D) $RFL✱✱G@
(E) None of these

Directions—(Q. 21–25) The digits of the following numbers are coded as follows :

Number	1	2	3	4	5	6	7	8	9
Symbol	×	✱	?	÷	$	•	+	!	Δ

(i) If the first digit of the number is odd then it will be coded as ✱ @.
(ii) If the last digit of the number is even then it will be coded as ✱ ©.

21. How will the number 846721 be coded ?
(A) © ÷ • + ✱ × (B) ! ÷ • + ✱ @
(C) ! ÷ • + ✱ × (D) @ ÷ • + ✱ ×
(E) None of these

22. How will the number 673258 be coded ?
(A) • + ? ✱ $! (B) @ + ? ✱ $!
(C) @ ? + $ ✱ ! (D) • + ? ✱ $
(E) None of these

23. How will the number 236475 be coded ?
(A) ? ✱ • ÷ + × (B) © ? • ÷ + @
(C) ✱ ? • ÷ + @ (D) © ? • ÷ + $
(E) None of these

24. How will the number 178524 be coded ?
(A) @ + ! $ ✱ © (B) × + ! $ © ÷
(C) @ + ! $ ✱ ÷ (D) × + ! $ ÷ +
(E) None of these

25. How will the number 25486 be coded ?
(A) ✱ $ ÷ ! Δ (B) ✱ $ ÷ ! ©
(C) ✱ © $ ÷ ! • (D) ✱ $! ÷ •
(E) None of these

Directions—(Q. 26–30) The following letters are coded as follows :

Letters	G	B	K	H	Z	M	F
	R	V	C	S	D	Q	X
	J	N	T	L	W	Y	P
Digits	5	4	1	3	2	8	7

(i) Letters of the English alphabet are coded by the digits from 1 to 8. Vowels are coded either by other digits or by $.

(ii) If any vowel is neither at the first place nor the last place of the word then it is coded as '6'.

(iii) If any vowel is either on the first or on the last place or on both places of the word then it is coded as '9'.

(iv) If the same vowel is at the first and last place of the word then it is coded as '$'.

Applying these conditions find the correct code in each question.

26. P K D E J H I
(A) 712653 $ (B) 7129539
(C) 7126539 (D) 712 $ 53 $
(E) None of these

27. A F D Q E N I
(A) 9728649 (B) $ 72864 $
(C) 9728949 (D) 6728949
(E) None of these

28. O P T I O N A L
(A) $ 7166463 (B) $ 7199493
(C) 67199493 (D) 97166463
(E) None of these

29. E G T A R L Q E
(A) 95165389 (B) 65195386
(C) $ 519538 $ (D) $ 51 $ 538 $
(E) None of these

30. E N I A N G E
(A) $ 4 $ $ 45 $ (B) 9466459
(C) $ 46645 $ (D) 6499456
(E) None of these

Directions—(Q. 31–35) The digits from 0 to 9 are coded as follows :

0	1	2	3	4	5	6	7	8	9
⊕	↑	$	δ	#	✱	?	!	✱	↓

31. What is the value of 67890 + 54321 in code ?
(A) $ ↑ $ $ ↑ ↑ (B) ↑ $ $ $ ↑ ↓
(C) ↑ $ $ $ ↓ ↑ (D) ↑ $ $ $ ↑ ↑
(E) None of these

32. If the symbols ✱ ✱ δ ↑ # + ! ↓ are written in digits, then which will be the number ?
(A) 58394620 (B) 14285452
(C) 58314520 (D) 58314621
(E) None of these

33. What is the value of δ $ ✱ ✱ # ✱ ?
(A) 14625 (B) 14285
(C) 13625 (D) 18425
(E) None of these

34. What is the value of 5432 + 1456 in code ?
(A) ? ↓ ✱ ✱ (B) ? ↑ ✱ !
(C) ✱ ↓ ✱ ! (D) Cannot be determind
(E) None of these

35. How will 24568 be coded ?
(A) $ # ✱ ? ✱ (B) % $ ✱ ? ✱
(C) ✱ # $ ✱ ? (D) $ ✱ # $?
(E) None of these

Directions—(Q. 36–40) In each of these questions, the given numbers are to be coded with the following conditions :

Digits	4	7	2	3	1	5	8	9	6	0
Letters	M	O	Q	R	N	P	U	T	S	L

(i) If the first and the last digits of the number are odd then each of those odd digits is to be coded as X.

(ii) If the first digit of a number is even then it will be coded as Y.

(iii) If the first digit of a number is odd then it will be coded as Z.

(iv) If 5 or 8 is neither the first digit nor the last digit of the number then, each of them will be coded as W.

(v) If the first and the last digits of the numbers are even then each of those even digits is to be coded as V.

36. 7 2 5 1 9 8 6 3
(A) XQPNTWSX (B) XQWNTUSX
(C) XQWNTWSX (D) XQWTNUSX
(E) None of these

37. 4 0 6 9 8 7 2 8
(A) VLSTVOQV (B) VLSTWOQV
(C) VLSQWOQV (D) VLSWTOQV
(E) None of these

38. 83721505
(A) YORQNWLP (B) UROQNPLP
(C) YROQNPLW (D) YROQNWLP
(E) None of these

39. 32596408
(A) RQWTSMLU (B) ZQWTSMLY
(C) ZQPTSMLU (D) ZQWTSMLW
(E) None of these

40. 51536079
(A) XNWRSLOX (B) XNPRSLOX
(C) WNWRSLOX (D) XNPRSLOT
(E) None of these

Directions—(Q. 41–45) Following digits are coded as follows :

Digits	0	1	2	3	4	5	6	7	8	9
Letters	K	L	H	D	M	N	P	S	V	R

While coding the number given in each questions following conditions are also to be observed.

(i) If 5 or 2 occurs in the just middle of the number, then it is to be coded as X.

(ii) If the first digit of the number is a prime number then it is to be coded as Y.

(iii) If the first digit of the number is odd but not a prime number, then it is to be coded as A.

(iv) If the first digit of the number is even and the last digit be zero then each of the both is to be coded as Z.

(v) If 6 or 9 is neither at the first place or last place but some where in between then it is to be coded as B.

41. 5 2 6 5 9 4 5
(A) YHPXRMY (B) YHPNRMY
(C) YHPMRMY (D) VHPMRMY
(E) None of these

42. 8 2 6 4 9 3 0
(A) VHPMRDK (B) ZHPMRDZ
(C) ZHPMRDK (D) VHPMRDZ
(E) None of these

43. 9 2 6 2 7 6 6
(A) AHPXSVH (B) AHPXSHV
(C) AHPXSPP (D) HAPXSPH
(E) None of these

44. 4 5 1 5 6 7 0
(A) MNLNPSK (B) MNPLNPS
(C) LMNPSVR (D) ZNLXBSZ
(E) None of these

45. 2 6 7 2 4 5 4
(A) YBSXMNM (B) BPXSLSB
(C) BKLHMPB (D) BRHDPRB
(E) None of these

Directions—(Q. 46–50) The following digits are coded as follows :

Digits	0	1	2	3	4	5	6	7	8	9
Symbols	Ω	⦸	⊠	Δ	⊕	π	ϕ	♂	χ	↓

While coding the number in each question following conditions are also to be observed.

(i) If the first and the last digits are same then each will be coded as ϕ.

(ii) If the first or the last digit be an odd number then it will be coded as @.

(iii) If the first or the last digit be an even number then it will be coded as ©.

(iv) 0 is not to be treated as even number.

46. 1 2 4 5 6 1
(A) ⦸ ⊠ ⊕ π ϕ ⦸ (B) $ ⊠ ⊕ π ϕ ⦸
(C) $ ⊠ ⊕ π ϕ $ (D) ↓ Ω ϕ Δ π ♂
(E) None of these

47. 8 9 3 5 7 3
(A) © ↓ Δ π ♂ @ (B) © ↓ Δ π ↓ @
(C) ↓ π Δ ↓ © @ (D) ⊠ π ↓ © @ ↓
(E) None of these

48. 9 5 4 3 5 3
(A) @ π ⊕ Δ π Δ (B) @ π ⊕ Δ π @
(C) ↓ ♂ π Δ ϕ Ω (D) Cannot be decided
(E) None of these

49. What is decode of © π Δ Ω ↓ © ?
(A) 253096 (B) 253098
(C) 453086 (D) 645328
(E) Cannot be decided

50. What is the code of 023798 ?
(A) Ω ⊠ Δ ♂ ↓ χ (B) Ω Δ ⊠ ♂ ↓ χ
(C) ↓ χ Δ Ω ♂ ↓ (D) Cannot be decided
(E) None of these

Exercise 2

1. If in a certain code 1 5 7 8 9 is written as XTZAL and 2346 as NPSU then how will 23549 be written in the same code ?
(A) NPTUL (B) PNTSL
(C) NPTSL (D) NBTSL
(E) None of these

2. If in a certain code 24761 is written as RLMTP and 8539 as KAHX then how will 84731 be written in the same code ?
(A) KLMHP (B) PHMLK
(C) LKHMP (D) KLMPH
(E) None of these

3. If in a certain code 67894 is written as HDFCK and 1235 as RSNL, then for which will be written as FCNHR ?
(A) 35487 (B) 89361
(C) 89631 (D) 98613
(E) None of these

4. If in a certain code 1362 is written as MRTP and 45789 as NACJK then for which will be written as PRAJT ?
(A) 23584 (B) 23587
(C) 23586 (D) 23589
(E) None of these

5. If in a certain code 69214 is written as HSZYR and 5387 as XNDU then how will 15486 be written in the same code ?
(A) ZYUDR (B) ZYDUR
(C) YXRDH (D) YXRHD
(E) None of these

6. If in a certain code 20689 is written as AMQTP and 17654 as BIGFL then how will 287707 be written in the same code ?
(A) ATIIMI (B) ATMMIM
(C) ATLLML (D) ATPPMP
(E) None of these

7. If in a certain code 10549 is written as KHRWV and 28763 as GLPQU then how will 10965 be written in the same code ?
(A) HRLQU (B) RWQUV
(C) GKRUL (D) HVGRU
(E) None of these

8. If in a certain code 25069 is written as DBHLP and 81743 as VZXWY, then how will 82046 be written in the same code ?
(A) VDHWL (B) VDWHL
(C) VDLWH (D) VDWLH
(E) None of these

9. If in a certain code 1324 is written as VRSH and 67589 and GPFDM, then how will 44897 be written in the same code ?
(A) VVHPS (B) HHPSF
(C) HHRGD (D) VVMSH
(E) None of these

10. If in a certain code 19078 is written as JPHSX and 65432 as DBAIK then how will 89235 be written in the same code ?
(A) JPDBI (B) XHVSK
(C) HPJAK (D) DAKJP
(E) None of these

11. If in a certain code 24657 is written as BPSIN and 1893 as KMLX then for which will be written as PINXS ?
(A) 24897 (B) 45736
(C) 45637 (D) 45763
(E) None of these

12. If in a certain code 14567 is written as LXRZA and 9823 as VPIC, then how will 94623 be written in the same code ?
(A) VXZIA (B) VXIAZ
(C) VXAIZ (D) VXZAI
(E) None of these

Directions—(Q. 13–20) If in a certain code 793041 is written as MARTIN and 8265 as POSE, then how will the number given in each question, be coded in the samecode ?

13. 80451
(A) PTIEM (B) PTIEN
(C) PTIER (D) PTIES
(E) None of these

14. 9126
(A) SATE (B) SAET
(C) ANOS (D) SANO
(E) None of these

15. 4328
(A) IROP (B) IRPO
(C) IROS (D) RIOP
(E) None of these

16. 76140
(A) MSNIR (B) MSNIT
(C) MSINT (D) MISNT
(E) None of these

17. 49682
(A) PAROS (B) PARNS
(C) PANRS (D) PARMS
(E) None of these

18. 66789
(A) PPSRN (B) SSMNT
(C) SSREP (D) SSOET
(E) None of these

19. 89903
(A) PAATR (B) PAART
(C) PAATS (D) PAAST
(E) None of these

20. 24105
(A) OINTS (B) OINTE
(C) OINTM (D) OINTR
(E) None of these

21. If in a certain code 56431 is written as RSHTU and 98270 as MLKPA, then how will 9517 be written in the same code ?
(A) MRUP (B) MURP
(C) MRPU (D) MRPT
(E) None of these

22. If in a certain code 32041 is written as KODWH and 6578 as BRMT then how will 2057 be written in the same code ?
(A) DWHR (B) ODRM
(C) ODMR (D) ODWH
(E) None of these

23. If in a certain code 65312 is written as NOSRP and 7894 as VTMA, then how will 3476 be written in the same code ?
(A) SAVN (B) SANV
(C) SNAV (D) SNVA
(E) None of these

24. If in a certain code 19435 is written as HDIJL and 7206 as MRTP then how will 97054 be written in the same code ?
(A) DMTLD (B) DMTLI
(C) DMTLR (D) DMRLJ
(E) None of these

25. If in a certain code 21987 is written as GQWXY and 5643 as ZVUT, then how will 86132 be written in the same code ?
(A) GXVTY
(B) XVQTW
(C) XVQTG
(D) Cannot be determined
(E) None of these

26. If in a certain code DELHI is written as 73541 and CALCUTTA as 82589662 then how will CALICUT be written in the same code ?
(A) 5279431 (B) 5978213
(C) 8251896 (D) 8543691

27. If the code of ROSE is 6821, code of CHAIR is 73456 and code of PREACH is 961473, what will be the code of SEARCH ?
(A) 246173 (B) 214673
(C) 214763 (D) 216473

28. If PRABA is coded as 27595 and THILAK is coded as 368451, how can BHARATHI be coded ?
(A) 37536689 (B) 57686535
(C) 96575368 (D) 96855368

29. If ENGLAND is coded as 1234526 and FRANCE is coded as 785291, how will GREECE be coded ?
(A) 381171 (B) 381191
(C) 832252 (D) 835545

30. If SHARP is coded as 58034 and PUSH as 4658, how will RUSH be coded ?
(A) 3568 (B) 3658
(C) 3685 (D) 3583

31. If GARIMA is coded as 725432 and TINA as 6482, how will MARTINA be coded ?
(A) 3256482 (B) 3265842
(C) 3645862 (D) 3658426

32. If in a certain code 24685 is written as 33776, how will 35791 be written in the same code ?
(A) 44826 (B) 44880
(C) 46682 (D) 44882

33. In a certain code 35796 is written as 44887, how will 46823 be written in the same code ?
(A) 57914 (B) 55914
(C) 55934 (D) 55714

34. If the code of 24673 is 35784, what will be the code of 3185 ?
(A) 4276 (B) 4296
(C) 4297 (D) 4295

Directions—(Q. 35–40) If the code of BHARAT is 243536 and the code of AMERIKA is 3705913, then what will be the code of word given in each of the following questions ?

35. RITEKH
(A) 596012 (B) 596014
(C) 596013 (D) 596015

36. BIRAT
(A) 29534 (B) 29536
(C) 29531 (D) 29537

37. RATAM
(A) 53637 (B) 53634
(C) 53636 (D) 53630

38. TEBHM
(A) 60240 (B) 60247
(C) 60245 (D) 60241

39. HARARE
(A) 435359 (B) 435356
(C) 435350 (D) 435351

40. TARRAM
(A) 635537 (B) 635534
(C) 635531 (D) 635532

41. In a certain code NEAR is written as '3215' and GOAL is written as '4716'. How is ROLE written in that code ?
(A) 5762 (B) 5672
(C) 5732 (D) 5761
(E) None of these

42. In a certain code BREAK is written as 51342 and KITE is written as 2793. How is RIB written in that code ?
(A) 175 (B) 176
(C) 185 (D) 135
(E) None of these

43. In a certain code BOARD is written as 53169 and NEAR is written is 2416. How is NODE written in that code ?
(A) 2394 (B) 2894
(C) 2934 (D) 2694
(E) None of these

44. In a certain code BAKE is written as 5796 and FIRE is written as 3146. How is FEAR written in that code ?
(A) 3564 (B) 3674
(C) 3574 (D) 3654
(E) None of these

45. In a certain code language 'DOME is written as '8943' and 'MEAL' is written as '4321'. What group of letters can be formed for the code '38249' ?
(A) EOADM (B) MEDOA
(C) EMDAO (D) EDAMO
(E) MEAOD

46. In a certain code MAIN is written as '9364' and DEAR is written as '8532'. How is MEND written in that code ?
(A) 9548 (B) 9458
(C) 9538 (D) 9528
(E) None of these

47. In a certain code BEND is written as '6392' and RAIN is written as '5149'. How is DARE written in that code ?
(A) 2153 (B) 2351
(C) 2315 (D) 2135
(E) None of these

48. In a certain code GUIDE is written as 49132 and BEAM is written as 8257. How is IMAGE written in that code ?
(A) 17542 (B) 15742
(C) 27541 (D) 18542
(E) None of these

Exercise 3

1. In a certain code ABHIJIT is written as CEJLLLV. How will BROTHER be written in the same code ?
(A) ETRVKGU (B) DUQWJHT
(C) DURWJIT (D) EUQWKHT
(E) None of these

2. In a certain code TIME is written as JUFN and MOTHER as UPNSFI. How will BOTH be written in the same code ?
(A) ANUI (B) PCIU
(C) PCGS (D) NAIU
(E) None of these

3. In a certain code HANGER is written as TDIMCG. How will KURESH be written in the same code ?
(A) JRGQWJ (B) LVSFTI
(C) MSTGUJ (D) MVTFUI
(E) None of these

4. If in a certain code PROBLEM is written as MPERLOB, how will NUMBERS be written in the same code ?
(A) SNUREMB (B) SNRUBME
(C) SNRUEMB (D) SNRUMEB
(E) None of these

5. If the code of MUMBAI is NWPFFO, then what is the code of ONGALE ?
(A) PPJEQL (B) PPJFQK
(C) PPJEPK (D) PPJEQK
(E) None of these

6. If the code of ADJUST is JDATSU, then what is the code of VERIFY ?
(A) REVFYI (B) REVYFI
(C) ERVYFI (D) VRFYIF
(E) None of these

7. If the code of NUMBER is OTNAFQ, then what is the code of CHANGE ?
(A) DGBMHF (B) BGBMHF
(C) DIBMHD (D) DGBMHD
(E) None of these

8. If the code of BOYS is SYBO and the code of PAPERS is SPRAEP then what is the code of MEDICINE ?
(A) EMENIDIC (B) EMNEICID
(C) EMNEIDIC (D) EMIDILEN
(E) None of these

9. If the code of CIRCULAR is RALCURIC, then what is the code of PENTAGON ?
(A) NOGTAPEN (B) GONTANEP
(C) GONTNEPA (D) NOGTANEP
(E) None of these

10. If the code of PARK is KKRAP and the code of PURE is KERUP then what is the code of BAT ?
(A) TTIAB (B) KTIAB
(C) KBAIT (D) KKIAB
(E) None of these

11. If the code of VARIETY is UCQKDVX, then what is code of CARRIER ?
(A) BBQTHGQ (B) BCPTHGQ
(C) BCQTHGQ (D) BCQSHGQ
(E) None of these

12. If in a certain code BENCHMARK is written as CNEBHKRAM then how will DESPERATE be written in the same code ?
(A) PSEDETRAE (B) PSEDEETRA
(C) PSEDEETAR (D) EDPSEARET
(E) None of these

13. If the code of INACTIVE is VITCANIE, then what is the code of COMPUTER ?
(A) UTEPMOCR (B) MOCPETUR
(C) ETUPMOCR (D) PMOCRETU
(E) None of these

14. If in a certain code each vowel such as a, e, i, o, u is replaced by its next letter of the English alphabet and each consonant is replaced by its previous letter of the English alphabet, then how will EDUCATION be written in the same code ?
(A) FCVBZSJNO (B) FETDBSJPO
(C) FCVBBSJPM (D) FCTBBUJNO
(E) None of these

15. If in a certain code DISARMAMENT is written as RASIDMTNEMA, then how will PSYCHOMETRY be written in the same code ?
(A) HCSYPOYRTEM (B) HCYSPOYRTEM
(C) YSPOHCYRTEM (D) HCYSPYRTEMO
(E) None of these

16. If the code of DISPLAY is BLQJDW, then what is the code of PROJECT ?
(A) NUMMCER (B) NUNMCFR
(C) NTNMCFR (D) NTMMCFR
(E) None of these

17. If the code of STANDING is NATSGNID, then what is the code of PRODUCES ?
(A) DOPRSECU (B) DORPSCEU
(C) DORPSECU (D) DORPESCU
(E) None of these

18. If the code of NUMBER is UMHTEL, then what is the code of SECOND ?
(A) CTQDRB (B) GRQDRB
(C) CTQFRB (D) GRQFRB
(E) None of these

19. If in a certain code PERFECT is written as RGTHGEV, then how will BROWN be written in the same code ?
(A) CTZXP (B) CSPXO
(C) DTQYP (D) DSQYP
(E) None of these

20. If in a certain code POSTING is written as LQOVEPC, then how will QUESTION be written in the same code ?
(A) MWAUQKKP (B) MWAURJKP
(C) MWAUPKKP (D) MVAUPKKP
(E) None of these

21. If in a certain code ANTICIPATION is written as ICITNANOITAP, then how will PRODUCTIVITY be written in the same code ?
(A) CUDORPYTIVITI (B) CUDORPYTIVIT
(C) CUDOPRYTIVIT (D) CUDORPTYIVIT
(E) None of these

22. If in a certain code NATIONALISM is written as OINTANMSAIL, then how will DEPARTMENTS be written in the same code ?
(A) RADEPTSTMNE (B) RADPETSTMNE
(C) RADPESTMTNE (D) RADPETSTNME
(E) None of these

23. If the code of OUTCOME is OQWWEQOE, then what is the code of REFRACT ?
(A) RTGITCET (B) RTGTICET
(C) RTGITECT (D) RTGICTET
(E) None of these

24. If the code of DISTURB is DTWVUKF, then what is the code of FRANTIC ?
(A) EKUPDTH (B) FKCPVTH
(C) EKVPCTH (D) FLVPCTH
(E) None of these

25. If the code of ROUTINE is VMRGFLI, then what is the code of CRUELTY ?
(A) VPVCZRL (B) VPCVZRL
(C) WPCVZRL (D) VOCVZRL
(E) None of these

26. If the code of TUTORIAL is DODNGLCF and the code of DANCE is YCJMZ then what is the code of EDUCATION ?
(A) ZYOTNLCMD (B) ZYOMDCLNJ
(C) ZYOMCDLNJ (D) ZYMODCLNJ
(E) None of these

27. If the code of BIRLA is MYXTB then what is the code of LIBRA ?
(A) TYMXB (B) TMXYB
(C) TBYMX (D) TYMBX
(E) None of these

28. If the code of RUPA is MNOP then what is the code of PARU ?
(A) OPMN (B) POMN
(C) OPNM (D) PONM
(E) None of these

29. If the code of CLASS is FODVV then what is the code of STUDENT ?
(A) VWXGHQW (B) VUXEHPU
(C) UVWEGOV (D) UXWGHOU
(E) None of these

30. If the code of MARBLE is CNDFGO and the code of CENTURY is BOPXYDL, then what is the code of MATURE ?
(A) CNXYDO (B) NXYCOD
(C) CNXYOD (D) CNXODY
(E) None of these

31. If the code of CAMELS is XPOGTZ and the code of RABBITS is YPUULFZ, then what is the code of S.AMERICA ?
(A) Z. POGYLAFX (B) Z. OPGYLPX
(C) Z. POGLXPY (D) Z. POGYLXP
(E) None of these

32. If the code of MUSIC is XVQYW and the code of USAGE is VQZJF, then what is the code of CAUSE ?
(A) WZQVF (B) WZVQF
(C) WVZQF (D) WVQZF
(E) None of these

33. If the code of CHOCOLATE is ETALOCOHC, then what is the code of GENERATOR ?
(A) ROTARGENE (B) ATORRGENE
(C) ATORRENEG (D) ROTARENEG
(E) None of these

34. If the code of PAINT is ZBVSK and the code of COPE is WARJ, then what is the code of NOTICE ?
(A) SAKVWJ (B) SAUVWJ
(C) SRKVWJ (D) SAKVXJ
(E) None of these

35. If the code of DISTANCE is FLUWCQEH then what is the code of NUMERALS ?
(A) PXNHTDNV (B) PXOITDNV
(C) PWOHTDNV (D) PXOHTDNV
(E) None of these

36. In a certain code MOTHER is written as PQXJJT then how will PAPER be written in the same code ?
(A) SCTGW (B) SWGTC
(C) STCGW (D) SGTCW
(E) None of these

37. If in a certain code BANKER is coded as LFSCBO then how will CONFER be coded in the same code ?
(A) FGSDOP (B) GFSDPO
(C) GFSEPO (D) FHSDPO
(E) None of these

38. If the code of SENSITIVE is QHLVGWGYC, then what will be the code of MICROSOFT ?
(A) KGAPMQMDT (B) QKETQUQHV
(C) KLAUMVMIR (D) LKBTNUNHS
(E) None of these

39. If the code of DIPLOMA is FERHQIC, then what is the code of FOREIGN ?
(A) HJTAKCP (B) HKTALCP
(C) HKTAKCP (D) HKTAKBP
(E) None of these

40. If the code of CYLINDER is UHGQGJWA, then what is the code of HYDROGEN ?
(A) QHJROBWF (B) QHJRPBWF
(C) QJHRPBWF (D) QHRJOBWF
(E) None of these

41. If in a certain code PENCIL is written as RCQAMJ, then how will BROKEN be written in the same code ?
(A) SPFLIM (B) SVFLIN
(C) FVSMGL (D) FPSMIL
(E) None of these

42. If in a certain code TRIPPLE is written as SQHOOKD, then how will DISPOSE be written in the same code ?
(A) CHRONRD (B) DSOESPI
(C) ESJTPTF (D) ESOPSID
(E) None of these

43. If the code of MONEY is XDJMNL, what is the code of TIGER ?
(A) QDFHS (B) SDFHS
(C) SHFDQ (D) UJHFS
(E) None of these

44. If the code of COULD is BNTKC and the code of MARGIN is LZQFHM, then what is the code of MOULDING ?
(A) CHMFINTK (B) LNKTCHMF
(C) LNTKCHMF (D) NITKHCMF
(E) None of these

45. If in a certain code VICTORY is written as YLFWRUB, then how will SUCCESS be written in the same code ?
(A) VXEEIVV (B) VXFFHVV
(C) VYEEHVV (D) VYEFIVV
(E) None of these

46. If in a certain code FRIEND is written as HUMJTK, then how will CANDLE be written in the same code ?
(A) EDRIRL (B) DCQHQK
(C) ESJFME (D) FYOBOC
(E) DEQJQM

47. If in a certain code SUBSTITUTION is written as ITSBUSNOITUT, then how will DISTRIBUTION be written in the same code ?
(A) IRTSIDNOITUB (B) IRTSIDNOIBUT
(C) IRTDISNOITUB (D) IRTDISNOIUTB
(E) None of these

48. If the code of DISTANCE is IDTUBECN and the code of DOCUMENT is ODDVNTNE, then what will be the code of THURSDAY ?
(A) DTVSTEYA (B) HTTQRYAD
(C) HTVSTYDA (D) HTVSYADS
(E) HTVSTYAD

49. If the code of SYSTEM is SYSMET and the code of NEARER is AENRER, then what is the code of FRACTION ?
(A) CARFTING (B) CARFNOIT
(C) CARFTION (D) ARFCNOIT
(E) None of these

50. In a certain code BOND is written as APME. How is MALE written in that code ?
(A) NZMD (B) LBKF
(C) NBMF (D) NBKE
(E) None of these

51. In a certain code SPORADIC is written as QNORDJEB. How is TROUBLES written in that code ?
(A) SQTNTFMC (B) TNQSRDKA
(C) TNQSTFMC (D) TFQSCMFT
(E) None of these

52. In a certain code DURATION is written as VEBSJUOP, how is FORECAST written in that code ?
(A) PGSFBDTU (B) PGFSUTBD
(C) PGSFUTBD (D) PGFSBDUT
(E) None of these

53. In a certain code GATHER is written as UBHQDG. How is DESIGN written in that code ?
(A) EFTMFH (B) TFEHFM
(C) TFEMFH (D) THEOHJ
(E) None of these

54. In a certain code HUMANITY is written as BNVIZUJO. How is EQUATION written that code ?
(A) BVRFUJPO (B) BVRFOPJU
(C) BUVJPRFO (D) BVJURFPO
(E) None of these

55. In a certain code 'DESCRIBE' is written as 'FCJSDTFE'. How will 'CONSIDER' be written in that code ?
(A) SFEJTOPD (B) SEFJTOPD
(C) QFETJOPD (D) QEFJTOPD
(E) None of these

56. In a certain code COMPUTER is written as LNBVQSFU. How is BULKHEAD written in that code ?
(A) MVCILEBF (B) KTAILEBF
(C) MTAGJEBF (D) KTAGJEBF
(E) None of these

57. In a certain code BROADEN is written as NQABOFE. How is DESKTOP written in that code ?
(A) RDCLQPU (B) TFELQPU
(C) RDCJQPU (D) EFTLONS
(E) None of these

58. In a certain code BREAKDOWN is written as NWODKAERB. How is TRIANGLES written in that code ?
(A) SELGNTRIA (B) AITNSELG
(C) SELGNAIRT (D) AIRTGNSEL
(E) None of these

59. In a certain code, PROBLEM is written as MELAPRO. How is SAVIOUR written in that code ?
(A) RUOHVAS (B) RUOHSAV
(C) RUOJSAV (D) VASHRUO
(E) None of these

60. In a certain code 'GATHERS' is written as 'UBHGRQD'. How will 'SEALING' be written in that code ?
(A) BFTKHMF (B) BFTKFMH
(C) BFTMHMF (D) TFBKHMF
(E) None of these

61. In a certain code 'MOUSE' is written as 'PRUQC'. How is 'SHIFT' written in that code ?
(A) VKIRD (B) VKIDR
(C) VJIDR (D) VIKRD
(E) None of these

62. In a certain code ACQUIRE is written as EIRUQAC, how is DENSITY written in that code ?
(A) YTISNDE (B) YITSNED
(C) YTISNED (D) YITSNDE
(E) None of these

63. In a certain code POACHED is written as BPQBEFI. How is COUNTER written in that code ?
(A) VPDMSFU (B) VPDOSFU
(C) VPDMUFS (D) DPVMSFU
(E) None of these

64. In a certain code, COURT is written as DPVSU. How is BRAIN written in that code ?
(A) CSBJO (B) AQZHM
(C) DTCKP (D) CTBKO
(E) None of these

65. In a certain code BOUND is written as OBTDN. How is CODES written in that code ?
(A) SECOC (B) OCESE
(C) OCCSE (D) OCCES
(E) None of these

66. In a certain code KINGDOM is written as JMCLJHP. How is QUANTUM written in that code ?
(A) VOLVPZS (B) SZPLOVV
(C) RVBOUVN (D) PZSLVOV
(E) None of these

67. In a certain code ORGANISE is written as BHSPDRHM. How is DESTINED written in that code ?
(A) SRDCCDMH (B) SRDCEFOJ
(C) UTFECDMH (D) UTFEEFMH
(E) None of these

68. In a certain code JOURNEY is written as TNISZFO. How is MEDICAL written in that code ?
(A) CDLJMBD (B) CDLJDBM
(C) LDCJMBD (D) EFNJMBD
(E) None of these

69. In a certain code SUBSTANCE is written as RATRUFDOB. How is TENTHOUSE written in that code ?
(A) SMDSIFTVP (B) UOFUIDRTN
(C) UOFUIFTVP (D) SMDSIDRTN
(E) None of these

70. 'SIDE' is written as 'DSIE' and 'ROAM' is written as 'AROM' in the same way as 'DUCK' is written as …… ?
(A) KDCU (B) KCUD
(C) CDKU (D) CDUK
(E) None of these

71. In a certain code DREAMING is written as BFSEFMHL. How is SELECTED written in that code ?
(A) FMFTCDSB (B) FMFTEFUD
(C) EKDRCDSB (D) EKDREFUD
(E) None of these

72. In a certain code DREAMING is written as BFSEFMHL. How is TREATISE written in that code ?
(A) USFBDRHS (B) BFSUDRHS
(C) BFSUSHRD (D) BDQSDRHS
(E) None of these

73. In a certain code 'SCENT' is coded as 'UOFDT' and 'LASER' is coded as 'SFTBM'. In the same code 'RETAIL' will be coded as '……' ?
(A) SFUBJM (B) MJFUBS
(C) SFUJMB (D) KHBSDQ
(E) MJBUFS

74. In a certain code DURABLE is written as QTCBDKA. How is COUNTRY written in that code ?
(A) VPDOZSU (B) TNBOXQS
(C) VPDMZSU (D) TNBOZSU
(E) None of these

75. In a certain code DISPLAY is written as RHCQZBM. How is GROUPED written in that code ?
(A) PSHTEFQ (B) NQFVCDO
(C) NQFVEFQ (D) PSHTCDO
(E) None of these

Exercise 4

1. In a certain code 'nee muk pic' means 'grave and concern'; 'ill dic so' means 'every body else' and 'tur muk so' means, 'body and soul'. What is the code for 'every concern' ?
(A) dic pic
(B) ill nee
(C) pic nee
(D) Cannot be determined
(E) None of these

2. In a certain code 'mok dan sil' means 'nice big house'; 'fit kon dan' means 'house is good' and 'warm ter fit' means 'cost is high'. What is the code for 'good' ?
(A) mok (B) dan
(C) fit (D) kon
(E) None of these

3. In a certain code 'bi nie pie' means, 'some good jokes', 'nie bat lik' means 'some real stories' and 'pie lik tol' means 'many good stories'. What is the code for 'jokes' ?
(A) bi
(B) nie

(C) pie
(D) Cannot be determined
(E) None of these

4. In a certain code 'dom pul ta' means 'bring hot food', 'put too sop' means 'food is good' and 'tak da sop' means 'good bright body'. What will be the code for 'hot' ?
(A) dom
(B) pul
(C) ta
(D) Cannot be determined
(E) None of these

5. In a certain code 'col tip mot' means 'singing is appreciable', 'mot baj min' means 'dancing is good' and 'tip nop baj' means, 'singing and dancing'. What is the code for 'good' ?
(A) nop
(B) min
(C) baj
(D) Cannot be determined
(E) None of these

6. In a certain code 'ish to inm' means 'neat and tidy'; 'qpr inm sen', means 'small but neat' and 'hsm sen rso' means 'good but erratic'. What is the code for 'but' ?
(A) inm (B) qpr
(C) sen (D) hsm
(E) None of these

Directions—(Q. 7 and 8) In a certain code :
(i) pit dar na means you are good
(ii) dar tok pa means good and bad
and (iii) tim na tok means they are bad.

7. Which word is used for 'they' in this code ?
(A) na (B) tok
(C) tim (D) pit
(E) None of these

8. For the above question which statement is surplus ?
(A) only (i) (B) only (ii)
(C) (i) or (ii) (D) (ii) or (iii)
(E) None of these

Directions—(Q. 9–10) In a certain code :
(i) pod na joc means very bright boy
(ii) tam nu pod means the boy comes
(iii) na per ton means keep the doll
and (iv) joc ton su means very good doll.

9. Which word is used for 'bright' in this code ?
(A) joc (b) pod
(C) ton (D) na
(E) None of these

10. For the above question which statement is surplus ?
(A) Only (i) (B) Only (iii)
(C) (iii) or (iv) (D) Only (iv)
(E) None of these

Directions—(Q. 11–17) In a certain code :
(i) il be pee means roses are blue.
(ii) sik hee means red flowers.
and (iii) pee mit hee means flowers are vegetables.

11. Which word is used for 'red' in this code ?
(A) hee
(B) sik
(C) be
(D) Cannot be determined
(E) None of these

12. Which word is used for 'roses' in this code ?
(A) il
(B) pee
(C) be
(D) Cannot be determined
(E) None of these

13. How will 'Vegetables are red flowers' be written in this code ?
(A) hee pee mit sik
(B) sik pee hee be
(C) il sik mik be
(D) Cannot be determined
(E) None of these

14. In a certain code language 'how old are you' is written as 'ko to po ha' and 'you are very beautiful' is written as 'na po da to'. How is 'how' written in that code language ?
(A) ko (B) ha
(C) ko or ha (D) Data inadequate
(E) None of these

15. In a certain code language, 'come again' is written as 'ho na', 'come over here' is written as 'pa na ta' and 'over and above' is written as 'ki ta ja'. How is 'here' written in that code language ?
(A) pa (B) na
(C) ta (D) ja
(E) None of these

16. In a certain code language 'tree is very beautiful' is written as 'ka na da ta' and 'this is strong tree' is written as 'na pa sa ka'. How is 'beautiful' written in that code language ?
(A) da (B) ta
(C) sa (D) Data inadequate
(E) None of these

17. In a certain code 'ja ki mo pe' mean 'at a frog's leap', 'mo la ki so' means 'take a leap ahead' and 're bo ja na' means 'insects are frog's diet'. Which of the following is the code for 'at' in that language ?
(A) ja (B) pe
(C) bo (D) re
(E) None of these

Exercise 5

1. In a certain code 'she is clever' is written as '$ # W', 'boy is not clever' as '@ # W ❋' and 'boy is not good' as '@ ❋ # +'. How will 'good clever boy' be written in the same code ?
   (A) @ # + (B) # ❋ +
   (C) ❋ # + (D) Data inadequate
   (E) None of these
2. In a certain code 'bring me a pen' is written as '7319', 'you and me' as '954' and 'bring a good pencil' as '1762'. What is the code for 'pen' ?
   (A) 1
   (B) 7
   (C) 9
   (D) Cannot be determined
   (E) None of these
3. In a certain code '325' means 'play with skill', '715' means, 'settle with courage' and '749' means, 'courage and pressure'. What is the code for 'pressure' ?
   (A) Either 4 or 9 (B) Either 7 or 9
   (C) Only 9 (D) Only 4
   (E) None of these
4. In a certain code '786' means 'study very hard', '958' means 'hard work pays' and '754' means 'study and work'. What is the code for 'very' ?
   (A) 8
   (B) 6
   (C) 7
   (D) Cannot be determined
   (E) None of these
5. In a certain code '851' means, 'good sweet fruits', '783' means 'good red rose' and '341' means 'rose and fruits'. What is the code for 'sweet' ?
   (A) 8 (B) 5
   (C) 1 (D) 3
   (E) None of these
6. In a certain code '3a, 2b, 7c' means, 'truth is eternal', 7c, 9 a, 8b, 3a' means 'enmity is not eternal' and '8a, 4d, 2b, 8b' means 'truth does not perish'. What is the code for 'enmity' ?
   (A) 3a (B) 7b
   (C) 8b (D) 9a
   (E) None of these
7. In a certain code '253' means 'books are old', '546' means 'man is old' and '378' means 'buy good books'. What is the code for 'are' ?
   (A) 2 (B) 4
   (C) 5 (D) 6
   (E) 9
8. In a certain code '479' means 'fruit is sweet', '248' means 'very sweet voice' and '673' means 'eat fruit daily'. What is the code for 'is' ?
   (A) 7
   (B) 9
   (C) 4
   (D) Cannot be determined
   (E) None of these
9. In a certain code '247' means 'spread red carpet', '354' means 'dust one carpet' and '234' means 'one red carpet'. What is the code for 'dust' ?
   (A) 2 (B) 3
   (C) 5 (D) 6
   (E) Cannot be determined
10. If in a certain code '467' means 'leaves are green'; '485' means 'green is good' and '639' means 'they are playing', then what is the code for 'leaves' ?
    (A) 4 (B) 6
    (C) 7 (D) 3
    (E) None of these
11. If in a certain code '256' means 'red colour chalk'; '589' means 'green colour flower' and '245' means 'white colour chalk' then what is the code for 'white' ?
    (A) 2
    (B) 4
    (C) 5
    (D) Cannot be determined
    (E) None of these
12. If in a certain code '256' means, 'you are good'; '637' means 'we are bad' and '358' means 'good and bad' then what is the code of 'and' ?
    (A) 2 (B) 5
    (C) 8 (D) 3
    (E) None of these
13. In a certain code FIGHT is written as '39%@4' and TEARS is written as '458©★'. How is STAGE written in that code ?
    (A) ★4835 (B) ★48%5
    (C) ★84%5 (D) ★48@5
    (E) None of these
14. In a certain code ROPE is written as %57$, DOUBT is written as 35#8★ and LIVE is written as @24$. How is TROUBLE written in that code ?
    (A) ★%5#8@$ (B) ★%#58@$
    (C) ★%5#8@4 (D) ★%#58$@
    (E) None of these
15. In a certain code RAID is written as %#★$, RIPE is written as %★@©. How is DEAR written in that code ?
    (A) @©#% (B) $@#%
    (C) @$#% (D) $©#%
    (E) None of these
16. In a certain code EXTRA is written as %5#73 and NOSE is written as 4@8%, how is STORE written in that code ?
    (A) 5#@7% (B) 8#@7%
    (C) 8#@%5 (D) 8@75%
    (E) None of these

17. In a certain code PAGE is written as '3%7@', SORE is written as 8©9@. How is 'PEAS' written in that code ?
(A) 3@©8 (B) 3@%9
(C) 3@%8 (D) 3%@8
(E) None of these

18. In a certain code MEAN is written as $57★ and DOME is written as 93$5. How is MOAN written in that code ?
(A) 3$7★ (B) $73★
(C) $37★ (D) $★37
(E) None of these

19. In a certain code BRING is written as '53@©2' and GUIDE is written as '2$@75'. How is GINGER written in that code ?
(A) 2©@253 (B) 2@©253
(C) 2@©753 (D) 2@©$53
(E) None of these

20. In a certain code, FUEL is written as $%#6 and KITE is written as @★7#. How is LIFE written in that code ?
(A) 6%$# (B) 6$%#
(C) 6★$# (D) 6%★#
(E) None of these

21. In a certain code GIVE is written as '51@©' and FAIL is written as '%219'. How is LEAF written in that code ?
(A) 5©2% (B) 9©2%
(C) 9@2% (D) 9©1%
(E) None of these

22. In a certain code JUMP is written as '39%4' and MEALS is written as '%2★7@'. How is PULSE written in that code ?
(A) 493@2 (B) 4★7@2
(C) 479@2 (D) 497@2
(E) None of these

23. If in a certain language WEAK is coded as 9%2$ and SKIT is coded as $#7@, then how will WAIT be coded in the same language ?
(A) 9267 (B) 9276
(C) 92@6 (D) 9@67
(E) None of these

24. In a certain code GROWN is written as 7@%36 and NAME is written as 64★$. How is GEAR written in that code ?
(A) 74$@ (B) 7$4@
(C) 7%4@ (D) 7@$4
(E) None of these

25. In a certain code 'GEAR' is written as '5914' and 'ROUTE' is written as '47289'. How is 'GATE' written in that code ?
(A) 5187 (B) 5189
(C) 5289 (D) 5429
(E) None of these

26. In a certain code BAKE is written as 3@#7, BIND is written 342%. How is DEAN written in that code ?
(A) %@72 (B) %7@2
(C) #7@2 (D) %7#2
(E) None of these

27. In a certain code FIRE is written as #%@$ and DEAL is written as ©$★↑. How is FAIL written in that code ?
(A) #★%↑ (B) #$%↑
(C) #★@$ (D) #★©↑
(E) None of these

Exercise 6

1. If green is called red, red is called yellow, yellow is called blue, blue is called orange and orange is called green, what is the colour of sky ?
(A) Blue (B) Red
(C) Yellow (D) Green
(E) Orange

2. If library is called as 'court', 'court is called as 'college', 'college' as 'gymnasium', 'gymnasium' as 'chamber', 'chamber' as 'cinemahall' and 'cinemahall' as 'hospital' then where will the cases of people be decided ?
(A) Court (B) College
(C) Gymnasium (D) Chamber
(E) Hospital

3. If water is called blue, blue is called red, red is called white, white is called sky, sky is called rain, rain is called green and green is called air, which of the following is the colour of milk.
(A) Air (B) Green
(C) White (D) Rain
(E) Sky

4. If white is called blue, blue is called red, red is called yellow, yellow is called green, green is called black, black is called violet and violet is called orange, what would be the colour of human blood ?
(A) Red (B) Green
(C) Yellow (D) Violet
(E) Orange

5. If frog is called lizard, lizard is called fish, fish is called snake, snake is called mole then to which is fisherman related ?
(A) Snake (B) Mole
(C) Lizard (D) Fish
(E) Frog

6. If city is called village, village is called forest, forest is called sofa, sofa is called freeze and freeze is called bathroom, then where do deer live ?
(A) Village (B) Sofa
(C) Freeze (D) Forest
(E) Bathroom

7. If vermilion is called colour, colour is called coaltar, coaltar is called ash, ash is called mica and mica is called gold, what is used in making a road ?
(A) Ash (B) Coaltar
(C) Colour (D) Mica
(E) Vermilion

8. If house called hut, hut is a called field, field is called drain, drain is called tray and tray is called cup, where is football played ?
(A) Field (B) Hut
(C) Drain (D) Tray
(E) Cup

9. If green is called black, black is called white, white is called rosy, rosy is called yellow, yellow is called blue and blue is brown, what is colour of ice ?
(A) White (B) Rosy
(C) Yellow (D) Black
(E) Green

10. If banana is apple, apple is orange, orange is pine-apple, pine-apple is guava and guava is grapes, then for which the colour is yellow ?
(A) Apple (B) Banana
(C) Guava (D) Pine-apple
(E) Grapes

11. If air is called water, water is called stone, stone is called tree, tree is called ship, ship is called boat and boat is called car, then where do birds live ?
(A) Tree (B) Stone
(C) Ship (D) Water
(E) Boat

12. If pen is called pencil, pencil is called paper, paper is called book, book is called news-paper, newspaper is called novel and novel is called Ramayan, then what we read for news ?
(A) Paper (B) Pencil
(C) Book (D) Novel
(E) Pen

13. If a boy is called girl, girl is called woman, woman is called child, child is called old, old is called adult and adult is called ignorant then to which boy is married ?
(A) Girl (B) Woman
(C) Child (D) Old
(E) Adult

14. If Patna is called Delhi, Delhi is called Mumbai, Mumbai is called Kolkata, Kolkata is called Chennai and Chennai is called Islamabad then where is the film industry of India ?
(A) Delhi (B) Mumbai
(C) Kolkata (D) Chennai
(E) Patna

15. If day is called night, night is called evening, evening is called noon, noon is called dawn and dawn is evening then when do the rays of the sun fall perpendicular to the earth ?
(A) Noon (B) Evening
(C) Dawn (D) Night
(E) Evening

16. If Gita is called Ramayan, Ramayan is called Puran, Puran is called Mahapuran, Mahapuran is called Ved and Ved is called Upnishad, then which was written by Vedvyas ?
(A) Puran (B) Ramayan
(C) Gita (D) Mahapuran
(E) Upnishad

17. If Dharmendra is called Rekha, Rekha is called Amitabh, Amitabh is called Madhuri, Madhuri is called Jitendra and Jitendra is called Minakshi, then what is name of the husband of Jaya Bhaduri ?
(A) Rekha (B) Amitabh
(C) Madhuri (D) Jitendra
(E) Dharmendra

18. If dhoti is called sari, sari is full pent, full pent is called trousers, trousers is called kurta, kurta is called blouse and blouse is called t-shirt, then what do women wear ?
(A) Sari (B) Full pent
(C) Trousers (D) Dhoti
(E) Kurta

19. If foot is called hand, hand is called nose, nose is called forehead, forehead is called thumb, thumb is called neck and neck is called stomach then with which does a man breath ?
(A) Nose (B) Hand
(C) Forehead (D) Thumb
(E) Foot

20. If radio is called watch, watch is called fan, fan is called television, television is called spinning wheel, spinning wheel is called phone and phone is called cycle, to which is television related ?
(A) Watch (B) Fan
(C) Spinning Wheel (D) Cycle
(E) Phone

21. If shoe is called tie, tie is called chappal, chappal is spactacles, spactacles is bangle and bangle is called necklace then what do we wear on the neck over the school dress ?
(A) Spactacles (B) Bangle
(C) Chappal (D) Tie
(E) Shoe

22. If winter is called summer, summer is called rains and rains is called spring, spring is called vacuum and vacuum is called desert then when does it rain ?
(A) Winter (B) Summer
(C) Spring (D) Vacuum
(D) Desert

23. If Holi is called Diwali, Diwali is Dashehara, Dashehara is Teacher's Day, Teacher's day is called Saraswati Puja and Sarswati Puja is Shivratri, then when was Ravan killed ?
(A) Saraswati Puja (B) Shivratri
(C) Dashera (D) Teacher's Day
(E) Diwali

24. If song is called glory, glory is poem, poem is story, story is verification, verification is sonnet and sonnet is epigram then what is sung at the time of marriage ?
(A) Story (B) Poem
(C) Glory (D) Verification
(E) Sonnet

25. If Kapildev is called P. T. Usha; P. T. Usha is Madhuri, Madhuri is P. Gopichand; P. Gopichand is Tania Sachdev and Tania Sachdev is called Limba Ram, then who is film actress ?
(A) P. Gopichand (B) Limba Ram
(C) P. T. Usha (D) Madhuri
(E) Kapildev

26. If runner is called swimmer, swimmer is called archer, archer is called writer, writer is called singer, singer is called guide and guide is called player, then what is Limbaram ?
(A) Swimmer (B) Guide
(C) Writer (D) Singer
(E) Archer

27. If carrom is called cricket, cricket is called ludo, ludo is called football, football is called volleyball and volleyball is called tennis then which game is played by Sachin Tendulkar ?
(A) Tennis (B) Football
(C) Ludo (D) Cricket
(E) Carrom

28. If sleeping is called awakening, awakening is walking, walking is running, running is weeping, weeping is drinking and drinking is eating then what do the runners do ?
(A) Walking (B) Running
(C) Awakening (D) Weeping
(E) Drinking

29. If glass is called cup, cup is tray, tray is plate, plate is mug, mug is bucket and bucket is spoon then in which tea is drunk ?
(A) Glass (B) Tray
(C) Cup (D) Plate
(E) Mug

30. If green is called red, red is called colour, colour is called vermilion, vermilion is called ashes, ashes is called charcoal and charcoal is called mica, then what is filled by woman in the line left by parting the hairs on the head ?
(A) Vermilion (B) Ashes
(C) Charcoal (D) Mica
(E) Colour

31. If Logic is called Geography, Geography is History, History is Mathematics, Mathematics is General Knowledge, General Knowledged is Science and Science is called Hindi, then which subject is related to the events ?
(A) Geography (B) History
(C) Mathematics (D) General Knowledge
(E) Logic

32. If tree is called road, road is drain, drain is sea, sea is canal, canal is anklet and anklet is called leaf, then on which cart moves ?
(A) Sea (B) Drain
(C) Road (D) Tree
(E) Anklet

33. If child is called lamb, lamb is chicken, chicken is egg, egg is hen and hen is calf then what is said to the young-one of hen ?
(A) Egg (B) Lamb
(C) Chicken (D) Hen
(E) Child

34. If cuckoo is called parrot, parrot is blackbird, blackbird is stork, stork is crow, crow is heron, heron is gander then what is name of green bird ?
(A) Parrot (B) Blackbird
(C) Heron (D) Gander
(E) Stork

35. If sheet is called pillow, pillow is quilt, quilt is mosquito net, mosquito net is scarf and scarf is saree, then which is used in winter ?
(A) Quilt (B) Pillow
(C) Mosquito net (D) Scarf
(E) Saree

36. If monkey is called man, man is horse, horse is elephant, elephant is lion and lion is ass and ass is jackal, who is the intelligent human-being on the Earth ?
(A) Man (B) Horse
(C) Elephant (D) Monkey
(E) Lion

37. If hero is called labourer, labourer is heroine, heroine is ass, ass is engineer, engineer is leader and leader is singer then in film who acts as beloved with the hero ?
(A) Heroine (B) Labourer
(C) Ass (D) Leader
(E) Singer

38. If Moon is called Star, Star is Sun, Sun is Earth, Earth is Jupiter, Jupiter is Mars and Mars is Mercury, where does man live ?
(A) Mars (b) Jupiter
(C) Earth (D) Sun
(E) Star

39. If husband is called wife, wife is grandfather, grandfather is grandmother, grandmother is maternal grand mother, maternal grandmother is maternal grandfather, maternal grandfather is maternal uncle and maternal uncle is maternal aunt, what will be said the father of the mother ?
(A) Maternal grandmother
(B) Maternal uncle
(C) Maternal grandfather
(D) Grandmother
(E) Maternal aunt

40. If field is called barn, barn is computer, computer is ox, ox is plough, plough is pipe and pipe is fruit, then with which is the calculation with high speed done ?
(A) Barn (B) Computer
(C) Ox (D) Plough
(E) Pipe

41. If worship is called sin, sin is god, god is noble, noble is yam, yam is demon and demon is man, who is worshiped by man ?
(A) Noble (B) God
(C) Yam (D) Sin
(E) Demon

42. If America is called England, England is Pakistan, Pakistan is India, India is Yemen, Yemen is Phisi, then Islamabad is the capital of which country ?
(A) Pakistan (B) India
(C) England (D) Yemen
(E) Phisi

43. If buffalo is called cow, cow is she-goat, she-goat is dog, dog is rat, rat is lion and lion is cat, who watches our house ?
(A) Cow (B) She-goat
(C) Dog (D) Rat
(E) Lion

44. If brush is called tooth-brush, tooth-brush is tooth-powder, tooth-powder is paste, paste is fire, fire is wine and wine is water, then what is made by colgate company to clean teeth ?
(A) Tooth-brush (B) Tooth-paste
(C) Paste (D) Fire
(E) Wine

45. If triangle is called rectangle, rectangle is circle, circle is square, square is sphere, sphere is cylinder and cylinder is cone then area of which is πr^2 ?
(A) Circle (B) Square
(C) Sphere (D) Triangle
(E) Cylinder

46. If chair is called table, table is furniture, furniture is desk, desk is almirah, almirah is bench and bench is bed, then where the clothes are kept ?
(A) Table (B) Furniture
(C) Desk (D) Almirah
(E) Bench

47. If cement is called rod, rod is brick, brick is sand, sand is clay, clay is plank and plank is marble, what is made by breaking stones ?
(A) Rod (B) Brick
(C) Sand (D) Clay
(E) Plank

48. If bread is called cheese, cheese is flour, flour is vegetable, vegetable is fruit and fruit is flower, then what is made from wheat ?
(A) Flour (B) Cheese
(C) Vegetable (D) Bread
(E) Flower

49. If cake is called sweet, sweet is cream, cream is curd, curd is butter, butter is porridge and porridge is jalebi, what is made by adding rennet to milk ?
(A) Butter (B) Sweet
(C) Cake (D) Cream
(E) Porridge

50. If scent is called flower, flower is rose, rose is red, red is green, green is yellow and yellow is blue, what is offered to God ?
(A) Flower (B) Scent
(C) Rose (E) Green
(E) Yellow

51. 'Green' means 'Yellow' 'Yellow' means 'White' 'White' means 'Red' 'Red' means 'Violet' 'Violet' means 'Black', then which of the following will be the colour of human blood ?
(A) Red (B) Black
(C) Green (E) White
(E) None of these

52. If 'white' is called 'red', 'red' is called 'blue', 'blue' is called 'yellow', 'yellow' is called 'black', 'black' is called 'green' and 'green' is called 'grey', then what is the colour of clear sky ?
(A) Red (B) Blue
(C) Yellow (E) Grey
(E) None of these

53. If Yellow is called Green, Green is called Black, Black is called White, White is called Red, Red is called Blue, Blue is called Orange then what is the colour of milk ?
(A) White (B) Black
(C) Red (E) Green
(E) None of these

54. If blue is called red, red is called green, green is called black and black is called white, what is the colour of grass ?
(A) Red (B) Black
(C) White (E) Green
(E) None of these

55. If Star is called Planet, Planet is called Satellite, Satellite is called Galaxy, Galaxy is called Comet then 'Earth' is classified under which category ?
(A) Galaxy (B) Comet
(C) Planet (E) Star
(E) None of these

56. If 'football' is called 'cricket', 'cricket' is called 'basketball', 'basketball' is called 'badminton', 'badminton' is called 'volleyball', 'volleyball' is called 'hockey' and 'hockey' is called 'golf', which of the following games is not played using a ball ?
(A) Volleyball (B) Basketball
(C) Hockey (E) Cricket
(E) None of these

57. If yellow is called blue, blue is called red, red is called pink, pink is called black and black is called orange then what is the colour of blood ?
(A) Yellow (B) Orange

(C) Pink (E) Blue

(E) None of these

Answers with Explanations

Exercise 1

1. (B) NOSER ⇒ 14065
2. (C) PROSE ⇒ 75406
3. (B) HORSE ⇒ 84506
4. (D) PORSB ⇒ 74509
5. (D) COBRN ⇒ 34951
6. (C) MORBH ⇒ 24598
7. (A) SEROM ⇒ 06542
8. (B) HORNS ⇒ 84510
9. (C) BERMN ⇒ 96521
10. (A) NORMB ⇒ 14529
11. (E) 56728 = HCDBE

As in the number, first digit is odd while the last digit is even therefore H and E will be replaced by X and Y respectively.

∴ Code of 56728 is XCDBY.

12. (B) 245376 = BIHJDC

As in the number the last digit is even and 4 is in between the number therefore C and I will be replaced by Y and Z respectively.

∴ Code of 245376 is BZHJDY.

13. (A) 987654 = GEDCHI

As in the number the first digit is odd and the last digit is even, therefore G and I will be replaced by X and Y respectively.

∴ Code of 987654 is XEDCHY.

14. (A) 274601 = BDICFA

Since 4 is in between the number, hence Z will replace 4.

∴ Code of 274601 is BDZCFA.

15. (E) 398756 = JGEDHC

Here the first digit is odd, last digit is even and 9 is in between the number. Hence X will replace 3, Z will replace 9 and Y will replace 6.

∴ Code of 398756 = XZEDHY.

16. (A) 1375490 = DHNLQGT

In this question none of the condition mentioned above is applicable.

17. (E) In $ Q R L ✱ H @ first and last symbols are $ and @ respectively. Hence first digit should be even and the last digit odd. But even and odd digits are many. So it is not possible to decode it.

18. (E)

Q L P ↑ R N T
4 5 8 0 6 7 0

If zero is preceded and followed by an even digit then zero will be replaced by ↑.

19. (B)

7 6 2 0 4 8 6
N R F T Q P R

⇒ # RF↑QP£

As first digit is odd and last digit is even and zero is preceded and followed by an even digit, hence N, T and R will be replaced by #, ↑ and £.

20. (C) 36250098 = HRFLTTGP = #RFLTTG£

As the first digit is odd and last is even, hence H and P will be replaced by # and £.

21. (C) 846721 = ! ÷ • + ★ ×
22. (D) 673258 = • + ? ★ $! = • + ? ★ $ ©

As the last digit is 8, hence ! will be replaced by ©.

23. (E) 236475 = ★ ? • ÷ + $
24. (A) 178524 = × + ! $ ★ ÷ = @ + ! $ ★ ©

According to both conditions × and ÷ will be replaced by @ and © respectively.

25. (B) 25486 = ★ $ ÷ ! • = ★ $ ÷ ! ©

According to the second condition • will be replaced by ©.

26. (C) PKDEJHI = 7126539

As the vowel E is in middle, hence the code for it, is 6. The vowel I is in the last, hence the code for it, will be 9.

27. (A) AFDQENI = 9728649

As the first and last places are occupied by different vowels, hence these both will be coded as 9. Also E is in the middle, hence the code for it, will be 6.

28. (D) OPTIONAL = 97166463

The first letter is O, therefore it will be coded as 9. The vowels I, O and A are in the middle. Hence each of these will be coded as 6.

29. (E) EGTARLQE = 516538

As for the first and last places is the sanse vowel E, hence it will be coded as $ and A is in the middle, so it will be coded as 6.

30. (C) ENIANGE = 46645

As for the first and last places, is the same vowel E, hence it will be coded as $ and A and I are in the middle, so they will be coded as 6 each.

31. (D) 67890 + 54321 = 122211
= ↑ $ $ $ ↑ ↑
32. (E) ★ ✱ δ ↑ # ⊕ ! ↓ = 58314079
33. (E) δ $ ✱ ★ # ★ = 325845
34. (E) (5432) + (1456) = 6888 = ? ✱ ✱ ✱
35. (A) 24568 = $ # ★ ? ✱
36. (C) 72519863 = OQPNTUSR
= XQWNTWSX

According to the condition (1), 7 and 3 will be coded as X and according to the condition (4), 5 and 8 will be coded as W.

37. (B) 40698728 = MLSTUOQU
= VLSTWOQV

According to the conditions (5) and (4), 4 and 8 will be coded as V, and 8 which is in the middle will be coded as W.

38. (D) 83721505 = UROQNPLP
= YROQNWLP

According to the conditions (2) and (4), 8 will be coded as Y and for 5 which is in the middle will be coded as W.

39. (E) 32596408 = RQPTSMLU
= ZQWTSMLU

According to the conditions (3) and (8), here 3 and 5 will be coded as Z and W respectively.

40. (A) 51536079 = PNPRSLOT
= XNWRSLOX

According to the conditions (1) and (4), 5, 9 will be coded as X and 5 which is in the middle will be coded as W.

41. (E) 5265945 = NHPNRMV
= YHBXBMN

According to the conditions (2) and (5), first 5 will be coded as Y while 6 and 9 will be coded as B.

42. (E) 8264930 = VHPMRDK
= ZHBMBDZ

43. (E) 9262766 = RHPHSPP
= AHBXSBP

44. (D) 4515670 = MNLNPSK
= ZNLXBSZ

45. (A) 2672454 = HPSHMNM
= YBSXMNM

46. (C) 124561 = ⊘ ⊠ Φ π Φ ⊘
= $ ⊠ Φ π Φ ϕ

According to the condition (1) hence will be replaced by $.

47. (A) 893573 = χ ↓ Δ π ♂ Δ
= © ↓ Δ π ♂ @

According to the conditions (3) and (2), χ and Δ are replaced by © and @ respectively.

48. (B) 954353 = ↓ π Φ Δ ≠ Δ
= @ π Φ Δ π @

According to the condition (2), ↓ and Δ are replaced by @.

49. (E)

50. (E) 023798 = Ω ⊠ Δ ♂ ↓ χ
= Ω ⊠ Δ ♂ ↓ ©

According to the condition (3), χ is replaced by ©.

Exercise 2

1. (C)

1	5	7	8	9
X	T	Z	A	L

and

2	3	4	6
N	P	S	U

∴

2	3	5	4	9

=

N	P	T	S	L

2. (A)

2	4	7	6	1
R	L	M	T	P

and

8	5	3	9
K	A	H	X

∴

8	4	7	3	1

= KLMHP

3. (B)

6	7	8	9	4
H	D	F	C	K

and

1	2	3	5
R	S	N	L

∴ FCNHR = 89361

4. (C)

1	3	6	2
M	R	T	P

and

4	5	7	8	9
N	A	C	J	K

∴ PRAJT = 23586

5. (C)

6	9	2	1	4
H	S	Z	Y	R

and

5	3	8	7
X	N	D	U

∴ 15486 = YXRDH

6. (A)

2	0	6	8	9
A	M	Q	T	P

and

1	7	6	5	4
B	I	G	F	L

∴ 287707 = ATIIMI

7. (E)

1	0	5	4	9
K	H	R	W	V

and

2	8	7	6	3
G	L	P	Q	U

∴ 10965 = KHVQR

8. (A)

2	5	0	6	9
D	B	H	L	P

and

8	1	7	4	3
V	Z	X	W	Y

∴ 82046 = VDHWL

9. (E)

1	3	2	4
V	R	S	H

and

6	7	5	8	9
G	P	F	D	M

∴ 44897 = HHDMP

10. (E)

1	9	0	7	8
J	P	H	S	X

and

6	5	4	3	2
D	B	A	I	K

∴ 89235 = XPKIB

11. (B)

2	4	6	5	7
B	P	S	I	N

and

1	8	9	3
K	M	L	X

∴ PINXS = 45736

12. (E)

1	4	5	6	7
L	X	R	Z	A

and

9	8	2	3
V	P	I	C

∴ 94623 = VXZIC

Answers (13 to 20) :

7	9	3	0	4	1
M	A	R	T	I	N

and

8	2	6	5
P	O	S	E

Codes of the given words are as follows :

13. (B) 80451 = PTIEN
14. (C) 9126 = ANOS
15. (A) 4328 = IROP

16. (B) 76140 = MSNIT
17. (E) 49682 = IASPO
18. (E) 66789 = SSMPA
19. (A) 89903 = PAATR
20. (B) 24105 = OINTE
21. (A) 9517 = MRUP
22. (B) 2057 = ODRM
23. (A) 3476 = SAVN
24. (B) 97054 = DMTLI
25. (C) 86132 = XVQTG
26. (C) CALICUT = 8251896
27. (B) SEARCH = 214673
28. (C) BHARATHI = 96575368
29. (B) GREECE = 381191
30. (B) RUSH = 3658
31. (A) MARTINA = 3256482
32. (D) 35791 = 44882

First is increased by 1 and next is decreased by 1.

33. (B)

3	5	7	9	6
4	4	8	8	7

∴ Code of 46823 is 55914.

First 1 is increased then next 1 is decreased.

34. (B)

2	4	6	7	3
3	5	7	8	4

∴ Code of 3185 is 4296.

One is increased each time.

Answers (35 to 51) :

35. (B) RITEKH = 596014
36. (B) BIRAT = 29536
37. (A) RATAM = 53637
38. (B) TEBHM = 60247
39. (C) HARARE = 435350
40. (A) TARRAM = 635537
41. (A) NEAR ⇒ 3215
and GOAL ⇒ 4716
∴ ROLE ⇒ 5762
42. (A) BREAK → 51342
and KITE → 2793
∴ R → 1
I → 7
and B → 5
∴ RIB → 175
43. (A) BOARD → 53169
and NEAR → 2416
∴ NODE → 2394
44. (B) BAKE → 5796
and FIRE → 3146
∴ FEAR → 3674
45. (D) DOME ⇒ 8943
and MEAL ⇒ 4321
∴ EDAMO ⇒ 38249

46. (A) MAIN ⇒ 9364
and DEAR ⇒ 8532
∴ MEND ⇒ 9548
47. (A) BEND → 6392
and RAIN → 5149
∴ DARE → 2153
48. (A) As,

G	U	I	D	E	
↓	↓	↓	↓	↓	
4	9	1	3	2	

and

B	E	A	M	
↓	↓	↓	↓	
8	2	5	7	

Similarly,

I	M	A	G	E	
↓	↓	↓	↓	↓	
1	7	5	4	2	

Exercise 3

1. (B)

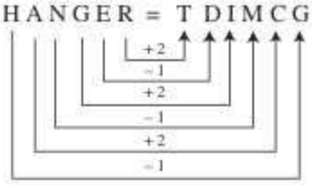
A	B	H	I	J	I	T
[+2	[+3	[+2	[+3	[+2	[+3	[+2
C	E	J	L	L	L	V

Hence

B	R	O	T	H	E	R
[+2	[+3	[+2	[+3	[+2	[+3	[+2
D	U	Q	W	J	H	T

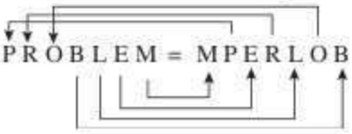
2. (B) T I ME Hence B O TH
J U F N P C I U
+1 +1 +1 +1 +1 +1 +1 +1

3. (E) HANGER = T DIMCG



Hence KURESH = JRGQWJ

4. (C) PROBLEM = MPERLOB



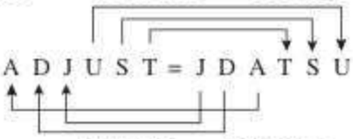
Hence NUMBERS = SNRUEMB

5. (D)

M	U	M	B	A	I
[+1	[+2	[+3	[+4	[+5	[+6
N	W	P	F	F	O

Hence ONGALE = PPJEQK

6. (B) A D J U S T = J D A T S U



Hence VERIFY = REVYFI

7. (D)

N	U	M	B	E	R
+1	−1	+1	−1	+1	−1
O	T	N	A	F	Q

Hence CHANGE = DGBMHD

8. (E) BOYS = SYOB

∴ MEDICINE = ENICIDEM

9. (D) C I R C U L A R

R A L C U R I C

∴ PENTAGON = NOGTANEP

10. (E) PARK = KKRAP

and PURE = KERUP

∴ BAT = KTAB

Note : K is added in extra in the code.

11. (C) V A R I E T Y
−1 +2 −1 +2 −1 +2 −1
U C Q K D V X

∴ CARRIER = BCQTHGQ

12. (C) BENCHMARK = CNEBHKRAM

∴ DESPERATE = PSEDEETAR

13. (C) INACTIVE = VITCANIE

∴ COMPUTER = ETUPMOCR

14. (C) EDUCATION = FCVBBSJPM

15. (B) DISARMAMENT = RASIDMTNEMA

∴ PSYCHOMETRY = HCYSPOYRTEM

16. (E) D I S P L A X
−2 +3 −2 +3 −2 +3 −2
B L Q S J D W

∴ PROJECT = NUMMCFR

17. (C) STANDING = NATSGNID

∴ PRODUCES = DORPSECU

18. (B) NUMBER = UMHTEL

∴ SECOND = GRQDRB

19. (C) P E R F E C T
+2 +2 +2 +2 +2 +2 +2
R G T H G E V

∴ BROWN = DTQYP

20. (C) P O S T I N G
−4 +2 −4 +2 −4 +2 −4
L Q O V E P C

∴ QUESTION = MWAUPKKP

21. (B) ANTICIPATION = ICITNANOITAP

∴ PRODUCTIVITY = CUDORPYTIVIT

22. (B) NATIONALISM = OINTANMSAIL

∴ DEPARTMENTS = RADPETSTMNE

23. (A) O → O (+0), O → Q (+2)

U T C O M E
+2 +3 +2 +2 +2 +0
W W E Q O E

∴ REFRACT = RTGITCET

24. (C) DISTURB = DTWVUKF

∴ FRANTIC = EKVPCTH

25. (E) ROUTINE = VMRGFLI

The letters in code are in reverse direction, *i.e.* the sum of place positions is 27.

∴ CRUELTY = BGOVFIX

26. (C) TUTORIAL = DODNGLCF

and DANCE = YCJMZ

∴ E → Z, D → Y, U → O, C → M, A → C, T → D, I → L, O → N and N → J

Hence EDUCATION = ZYOMCDLNJ

27. (A) BIRLA = MYXTB

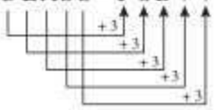
B → M, I → Y, R → X, L → T and A → B

∴ LIBRA = TYMXB

28. (A) RUPA = MNOP

∴ PARU = OPMN

29. (A) C L A S S = F O D V V



∴ STUDENT = VWXGHQW

30. (A) MARBLE = CNDFGO

and CENTURY = BOPXYDL

∴ MATURE = CNXYDO

31. (D) CAMELS = XPOGTZ

and RABBITS = YPUULFZ

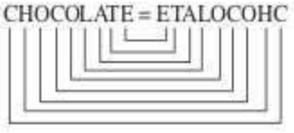
∴ S. AMERICA = Z. POGYLXP

32. (B) MUSIC = XYQYW

and USAGE = VQZJF

∴ CAUSE = WZVQF

33. (D) CHOCOLATE = ETALOCOHC



∴ GENERATOR = ROTARENEG

34. (A) PAINT = ZBVSK

and COPE = WARJ

∴ NOTICE = SAKVWJ

35. (C)

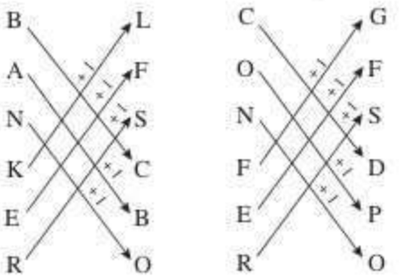
D	I	S	T	A	N	C	E
↓	↓	↓	↓	↓	↓	↓	↓
+2	+3	+2	+3	+2	+3	+2	+3
F	L	U	W	C	Q	E	H

∴ NUMERALS = PXOHTDNV

36. (A)

As		Similarly	
M	$\xrightarrow{+3}$ P	P	$\xrightarrow{+3}$ S
O	$\xrightarrow{+2}$ Q	A	$\xrightarrow{+2}$ C
T	$\xrightarrow{+4}$ X	P	$\xrightarrow{+4}$ T
H	$\xrightarrow{+2}$ J	E	$\xrightarrow{+2}$ G
E	$\xrightarrow{+5}$ J	R	$\xrightarrow{+5}$ W
R	$\xrightarrow{+2}$ T		

37. (A) As Similarly



38. (C)

S	E	N	S	I	T	I	V	E
↓	↓	↓	↓	↓	↓	↓	↓	↓
−2	+3	−2	+3	−2	+3	−2	+3	−2
Q	H	L	V	G	W	G	Y	C

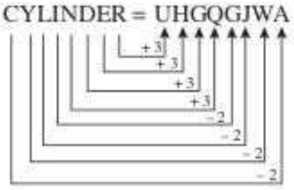
∴ MICROSOFT = KLAUMVMIR

39. (C)

D	I	P	L	O	M	A
↓	↓	↓	↓	↓	↓	↓
+2	−4	+2	−4	+2	−4	+2
F	E	R	H	Q	I	C

∴ FOREIGN = HKTAKCP

40. (B) CYLINDER = UHGQGJWA



∴ HYDROGEN = QHJRPBWF

41. (E)

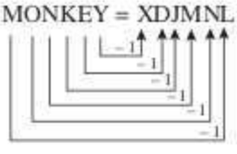
P	E	N	C	I	L
↓	↓	↓	↓	↓	↓
+2	−2	+3	−2	+4	−2
R	C	Q	A	M	J

∴ BROKEN = DPRIIL

42. (A)

T	R	I	P	P	L	E
↓	↓	↓	↓	↓	↓	↓
−1	−1	−1	−1	−1	−1	−1
S	Q	H	O	O	K	D

43. (A) MONKEY = XDJMNL



∴ TIGER = QDFHS

44. (C)

C	O	U	L	D
↓	↓	↓	↓	↓
−1	−1	−1	−1	−1
B	N	T	K	C

∴ MOULDING = LNTKCHMF

45. (B)

V	I	C	T	O	R	Y
↓	↓	↓	↓	↓	↓	↓
+3	+3	+3	+3	+3	+3	+3
Y	L	F	W	R	U	B

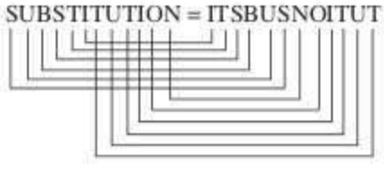
∴ SUCCESS = VXFFHVV

46. (A)

F	R	I	E	N	D
↓	↓	↓	↓	↓	↓
+2	+3	+4	+5	+6	+7
H	U	M	J	T	K

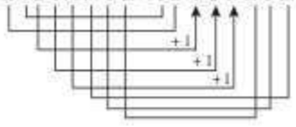
∴ CANDLE = EDRIRL

47. (A) SUBSTITUTION = ITSBUSNOITUT



∴ DISTRIBUTION = IRTSIDNOITUB

48. (E) DISTANCE = IDTUBECN



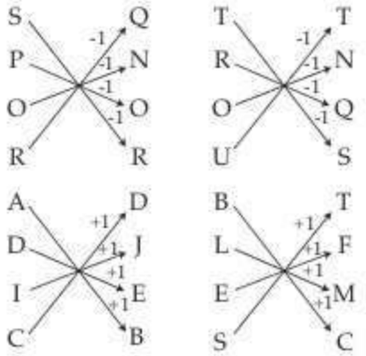
∴ THURSDAY = HTVSTYAD

49. (B) SYSTEM = SYSMET
and NEARER = AENRER
∴ FRACTION = CARFNOIT
CERTAIN = XVIGZRM

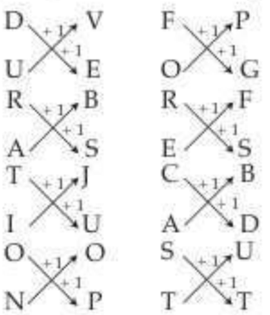
50. (B) As, Similarly,

B $\xrightarrow{-1}$ A M $\xrightarrow{-1}$ L
O $\xrightarrow{+1}$ P A $\xrightarrow{+1}$ B
N $\xrightarrow{-1}$ M L $\xrightarrow{-1}$ K
D $\xrightarrow{+1}$ E E $\xrightarrow{+1}$ F

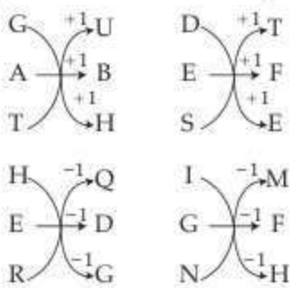
51. (C) As, Similarly,



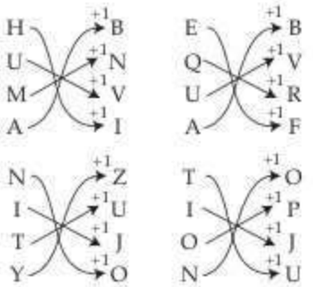
52. (D) As, Similarly



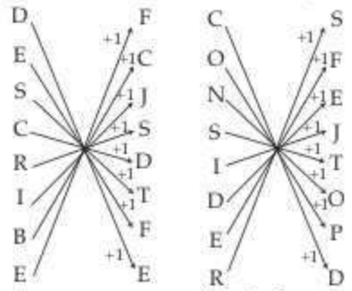
53. (C) As, Similarly,



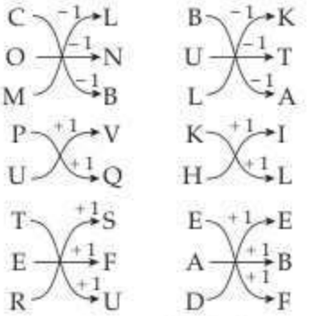
54. (B) As, Similarly,



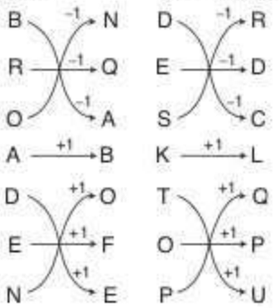
55. (A) As, Similarly,



56. (B) As, Similarly,



57. (A) As, Similarly,



58. (C) As,

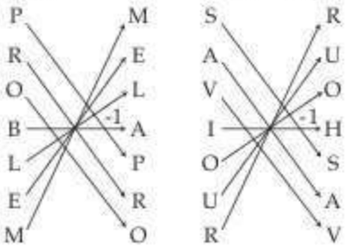
B R E A K D O W N
1 2 3 4 5 6 7 8 9

→ N W O D K A E R B
9 8 7 6 5 4 3 2 1

Similarly,

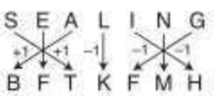
T R I A N G L E S → S E L G N A I R T
1 2 3 4 5 6 7 8 9 → 9 8 7 6 5 4 3 2 1

59. (B) As, Similarly,



60. (B) As,

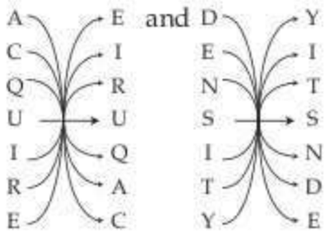
Similarly,



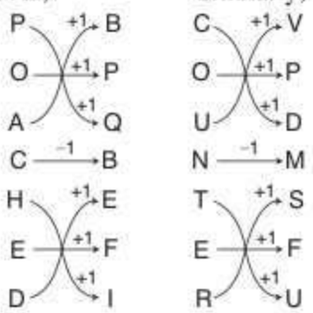
61. (B) As, Similarly,

M	+3 →	P	S	+3 →	V
O	+3 →	R	H	+3 →	K
U	+0 →	U	I	+0 →	I
S	−2 →	Q	F	−2 →	D
E	−2 →	C	T	−2 →	R

62. (D)



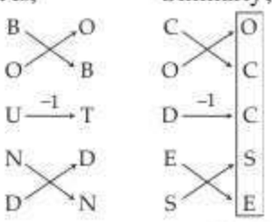
63. (A) As, Similarly,



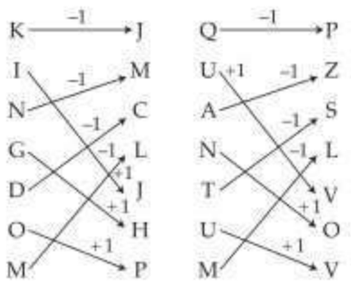
64. (A) As, Similarly,

C	+1 →	D	B	+1 →	C
O	+1 →	P	R	+1 →	S
U	+1 →	V	A	+1 →	B
R	+1 →	S	I	+1 →	J
T	+1 →	U	N	+1 →	O

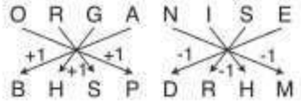
65. (C) As, Similarly,



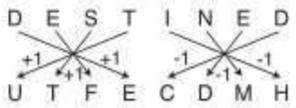
66. (D) As, Similarly,



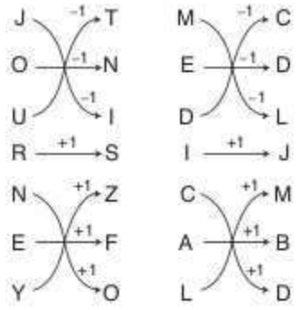
67. (C) As,



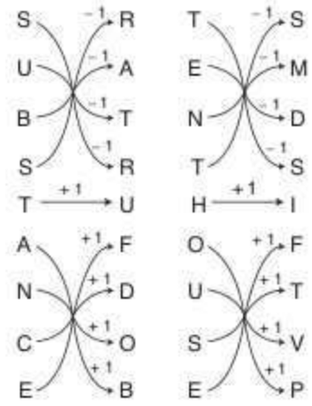
Similarly,



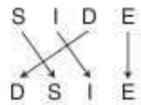
68. (A) As, Similarly,



69. (A) As, Similarly,

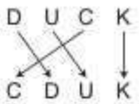


70. (D) As, S I D E

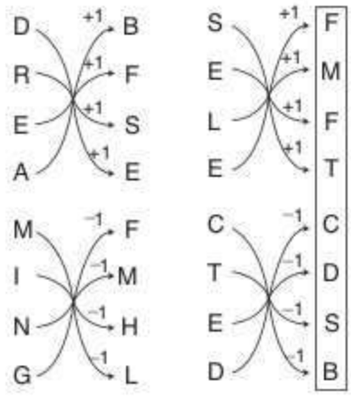


and R O A M

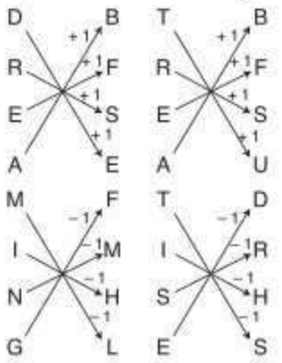
In the same way,



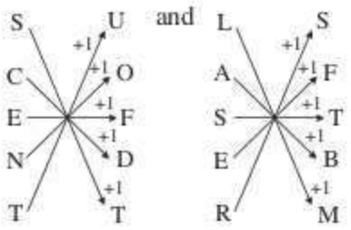
71. (A) As, Similarly,



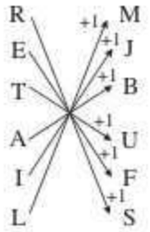
72. (B) As, Similarly,



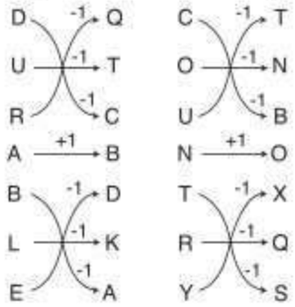
73. As,



Hence,



74. (B) As, Similarly,



75. (C) As, D I S P L A Y → R H C Q Z B M

Similarly, G R O U P E D → N Q F V E F Q

Exercise 4

1. (D)
2. (D) (i) mok dan sil = nice big house
   (ii) fit kon dan = house is good
   (iii) warm ter fit = cost is high
   From (i) and (ii) house → dan
   and from (ii) and (iii) is → fit
   ∴ good → kon.
3. (A) (i) bi nie pie = some good jokes
   (ii) nie bat lik = some real stories
   (iii) pie lik tol = many good stories
   From (i) and (iii) good → pie
   From (i) and (ii) some → nie
   ∴ jokes → bi
4. (D)
5. (B) (i) col tip mot = singing is appreciable
   (ii) mot baj min = dancing is good
   (iii) tip nop baj = singing and dancing
   From (i) and (ii) is → mot and from (ii) and (iii) dancing → baj
   ∴ good → min
6. (C) (i) ish to inm = neat and tidy
   (ii) qpr inm sen = small but neat
   (iii) hsm sen rso = good but erratic
   From (ii) and (iii) but → sen

   For Questions 7 and 8 :

   (i) pit dar na = you are good
   (ii) dar tok pa = good and bad
   (iii) tim na tok = they are bad
7. (C) From (i) and (ii) are → na and from (ii) and (iii) bad → tok
   ∴ they → tim
8. (E) Nothing is surplus.

   For Questions 8 and 9 :

   (i) pod na joc = very bright boy
   (ii) tam nu pod = the boy comes
   (iii) na per ton = keep the doll.
   (iv) joc ton su = very good doll
9. (D) From (i) and (ii) boy → pod and from (i) and (iv) very → joc
   ∴ bright → na
10. (B)

    For Questions 11 to 13 :

    (i) il be pee = roses are blue
    (ii) sik hee = red flowers
    (iii) pee mit hee = flowers are vegetables
11. (B) From (ii) and (iii) flowers → hee
    ∴ red → sik
12. (D) 13. (A)
14. (C) how old are you → ko to po ha …(1)
    you are very beautiful → na po da to …(2)
    From (1) and (2),
    you and are → po and to
    ∴ how → ko or ha
15. (A) come again → ho na …(1)
    come over here → pa na ta …(2)
    over and above → ki ta ja …(3)
    From (1) and (2),
    come → na

From (2) and (3),

over → ta

∴ here → pa

16. (D) Tree is very beautiful → ka na da ta …(1)
This is strong tree → na pa sa ka …(2)
∴ is tree → na ka
Hence, data is inadequate to find the code of 'beautiful'.

17. (B) ja ki mo pe → at a frog's leap …(1)
mo la ki so → take a leap ahead …(2)

Exercise 5

1. (D) (i) she is clever = $ # W
(ii) boy is not clever = @ % W ★
(iii) boy is not good = @ ★ # +
Hence the code of 'good clever boy' cannot be determined.

2. (E) (i) bring me a pen = 7319
(ii) you and me = 954
(iii) bring a good pencil = 1762
From (i) and (iii) code for 'bring a' = 71 and from (i) and (ii) me → 9
∴ Code for pen → 3

3. (A) (i) 325 → play with skill
(ii) 715 → settle with courage
(iii) 749 → courage and pressure.
From (ii) and (iii) courage → 7
∴ Pressure → either 4 or 9.

4. (B) (i) 786 = study very hard
(ii) 958 = hard work pays
(iii) 645 = study and work
From (i) and (iii) study → 6
From (i) and (ii) hard → 8
∴ very → 7

5. (B) (i) 851 = good sweet fruit
(ii) 783 = good red rose
(iii) 341 = rose and fruit
From (i) and (ii) good → 8
From (i) and (iii) fruit → 1
Hence 'sweet' → 5

6. (D) (i) 3a, 2b, 7c = truth is eternal
(ii) 7c, 9a, 8b, 3a = enmity is not eternal
(iii) 8a, 4d, 2b, 8b = truth does not perish
From (i) and (ii) is eternal → 3a, 7c
From (i) and (iii) truth → 2b
From (ii) and (iii) not → 8b
∴ enmity → 9a

7. (A) (i) 253 = books are old
(ii) 546 = man is old
(iii) 378 = buy good books
From (i) and (ii) old → 5
From (i) and (iii) books → 3
∴ are → 2

8. (B) (i) 479 = fruit is sweet
(ii) 248 = very sweet voice
(iii) 637 = eat fruit daily
From (i) and (ii) sweet → 4
From (i) and (iii) fruit → 7
∴ is → 9

9. (C) (i) 247 = spread red carpet
(ii) 354 = dust one carpet
(iii) 234 = one red carpet
From (i), (ii) and (iii) carpet → 4
and from (ii) and (iii) one → 3
∴ dust → 5

10. (C) (i) 467 = leaves are green
(ii) 485 = green is good
(iii) 639 = they are playing
From (i) and (ii) green → 4
From (i) and (iii) are → 6
∴ leaves → 7

11. (B) (i) 256 = red colour chalk
(ii) 589 = green colour flower
(iii) 245 = white colour chalk
From (i), (ii) and (iii) colour → 5
and from (i) and (iii) chalk → 2
∴ white → 4

12. (C) (i) 256 = you are good
(ii) 637 = we are bad
(iii) 358 = good and bad
From (ii) and (iii) bad → 3
and (i) and (iii) good → 5
∴ and → 8

13. (B) F I G H T ⇒ 3 9 % @ 4
and T E A R S ⇒ 4 5 8 © ★
∴ S T A G E ⇒ ★ 4 8 % 5

14. (A) ROPE → %57$
DOUBT → 35#8★
and LIVE → @24$
∴ TROUBLE → ★%5#8@$

15. (D) RAID → %#★$
and RIPE → %★@©
∴ DEAR → $©#%

16. (B) EXTRA → %5#73
and NOSE → 4@8%
∴ STORE → 8#@7%

17. (C) P A G E ⇒ 3%7@
and S O R E ⇒ 8©9@
∴ P E A S ⇒ 3@%8

18. (C) MEAN → $57★
and DOME → 93$5
∴ MOAN → $37★

19. (B) BRING → 53@©2
and GUIDE → 2$@75
∴ GINGER → 2@©253

20. (E) FUEL → $%#6
and KITE → @●7#
∴ LIFE → 6●$#

21. (B) GIVE ⇒ 51@©
and FAIL ⇒ %219
∴ LEAF ⇒ 9©2%

22. (D) As, and
J → 3 M → %
U → 9 E → 2
M → % A → ★
P → 4 L → 7
S → @
Similarly,
∴ PULSE ⇒ 497@2

23. (E) WEAK → 9%2$
and SKIT → #$7@
WAIT → 927@

24. (B) As,

G	R	O	W	N	and	N	A	M	E
↓	↓	↓	↓	↓		↓	↓	↓	↓
7	@	%	3	6		6	4	★	$

Similarly,

G	E	A	R
↓	↓	↓	↓
7	$	4	@

25. (B) G → 5 and R → 4 ∴ G → 5
E → 9 O → 7 A → 1
A → 1 U → 2 T → 8
R → 4 T → 8 E → 9
E → 9

26. (B) BAKE ⇒ 3@#7
and BIND ⇒ 342%
∴ DEAN ⇒ %7@2

27. (A) FIRE → #%@$
and DEAL → ©$★↑
∴ FAIL → #★%↑

Exercise 6

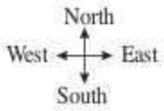
1. (E) As the colour of sky is blue and blue is called orange. Hence the colour of sky is orange.
2. (B) The cases of people are decided in 'court' and 'court' as called as 'college'. Therefore the cases of the people will be decided in 'college'.
3. (E) As the colour of milk is white and white is called sky. Hence sky is the answer.
4. (C) As the colour of human blood is red but red is called yellow. Hence yellow is the answer.
5. (A) Fisherman catches fish and fish is called snake.
6. (B) Forest is called sofa. Hence deer live in sofa.
7. (A) Coaltar is called ash. Hence ash is used in making road.
8. (C) Field is called drain. Hence football is played in drain.
9. (B) White is called rosy. Hence the colour of ice is rosy.
10. (A) Banana is of yellow colour and banana is called apple.
11. (C) Tree is called ship. Hence birds live on ship.
12. (D) Newspaper is called novel. Hence for news we read novel.
13. (B) The girl is woman. Hence boy is married with woman.
14. (C) Mumbai is called Kolkata. Hence film industry is in Kolkata.
15. (C) Noon is called dawn. Hence the sunrays fall vertically in dawn.
16. (A) Ramayan is called Puran. Hence Vedvyas wrote Puran.
17. (C) Amitabh is called Madhuri. Hence the name of the husband of Jaya Bhaduri is Madhuri.
18. (B) Sari is called full pent. Hence women wear full pent.
19. (C) Nose is called forehead. Hence a man breathes with forehead.
20. (C) Television is called spinning wheel. Hence television is related to spinning wheel.
21. (C) Tie is called chappal. Hence we wear chappal on the neck over the school dress.
22. (C) Rains is called spring. Hence it rains in spring.
23. (D) Dashehara is called Teacher's day. Hence Ravan was killed on teacher's day.
24. (B) Glory is called poem. Hence at the time of marriage poem is sung.
25. (A) Madhuri is called P. Gopichand. Hence the film actress is P. Gopichand.
26. (C) Archer is called writer. Hence Limbaram is a writer.
27. (C) Cricket is called ludo. Hence Sachin Tedulkar play ludo.
28. (D) Running is called weeping. Hence runner weeps.
29. (B) Cup is called tray. Hence tea is drunk in tray.
30. (B) Vermilion is called ashes. Hence ashes is filled by woman in the line left by parting the hairs on the head.
31. (C) History is called Mathematics. Hence Mathematics is related to the events.
32. (B) Road is called drain. Hence cart moves on drain.
33. (A) Chicken is called egg. Hence the young one of hen is egg.
34. (B) Parrot is called black-bird. Hence black bird is the green bird.
35. (C) Quilt is called mosquito net. Hence mosquito net is used in winter.
36. (B) Man is called horse. Hence horse is the intelligent human being on the Earth.
37. (C) Heroine is called ass. Hence ass acts as beloved with the hero.

Continued on Page 164

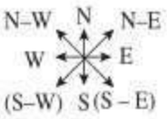
Direction-Sense

Questions based on directions are generally asked in each examination. Hence in order to give correct answer, a candidate must have full knowledge about directions.

There are four main directions—North, South, East and West as shown below :



There are four cardinal directions—North-East (N–E), North-West (N–W) South–East (S–E) and South–West (S–W). These are shown as below :

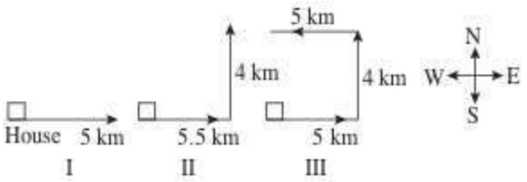


1. At the time of sunrise if a man stands facing the east, his shadow will be towards west.
2. At the time of sunset the shadow of an object is always in the east.
3. If a man stands facing the North, at the time of sunrise his shadow will be towards his left and at the time of sunset it will be towards his right.
4. At 12·00 noon, the rays of the sun are vertically downward hence there will be no shadow.

Main types of questions are given below :

Example 1. Bably starting from her house, goes 5 km in the East, then she turns to her left and goes 4 km. Finally, she turns to her left and goes 5 km. Now how far is she from her house and in what direction ?

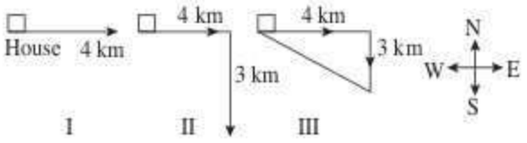
Solution :



From the third position it is clear she is 4 km from her house and is in the North direction.

Example 2. Chhoti starting from her house, goes 4 km in the East, then she turns to her right and goes 3 km. What minimum distance will be covered by her to come back to her house ?

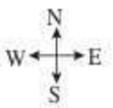
Solution :



$$\therefore \quad \text{Minimum distance} = \sqrt{(4)^2 + (3)^2}$$
$$= \sqrt{16 + 9}$$
$$= \sqrt{25}$$
$$= 5 \text{ km}$$

Example 3. One morning after sunrise Juhi while going to school met to Lalli at Boring road crossing. Lalli's shadow was exactly to the right of Juhi. If they were face to face, which direction was Juhi facing ?

Solution : In the morning sunrises in the east.

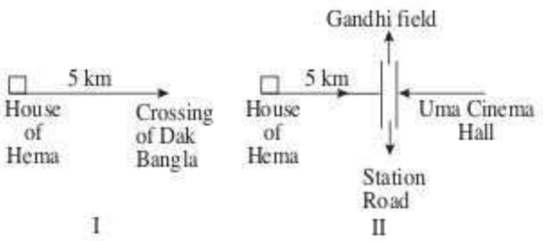


So in morning the shadow falls towards the west.

Now Lalli's shadow falls to the right of Juhi. Hence Juhi is facing South.

Example 4. Hema starting from her house walked 5 km to reach the crossing of Dak Bungla. In which direction she was going, a road opposite to this direction goes to Uma Cinema hall. The road to the right goes to station. If the road which goes to station is just opposite to the road which Gandhi field, then in which direction to Hema is the road which goes to Gandhi field ?

Solution :



From II it is clear that the road which goes to Gandhi field is left to Hema.

Exercise

1. Gaurav walks 20 km towards North. He turns left and walks 40 km. He again turns left and walks 20 km. Finally he moves 20 km after turning to the left. How far is he from his starting position ?
   (A) 20 km (B) 30 km
   (C) 50 km (D) 60 km
   (E) None of these
2. A rat runs 20 m towards East and turns to right and runs 10 m. Then he turns to right and runs 9 m. Again he turns to right and runs 5 m. After this he turns to left and runs 12 m and finally he turns to right and runs 6 m. Now to which direction is the rat facing ?

(A) East (B) West
(C) North (D) South
(E) None of these

3. Radha moves towards South-East a distance of 7 km, then she moves towards West and travels a distance of 14 km. From here she moves towards North-West a distance of 7 km and finally she moves a distance of 4 km towards east. How far is she now from the starting point ?
(A) 3 km (B) 4 km
(C) 10 km (D) 11 km
(E) None of these

4. Ravi left home and cycled 10 km towards South, then turned right and cycled 5 km and then again turned right and cycled 10 km. After this he turned left and cycled 10 km. How many kilometres will he have to cycle to reach his home straight ?
(A) 10 km (B) 15 km
(C) 20 km (D) 25 km
(E) None of these

5. A child went 90 m in the East to look for his father, then he turned right and went 20 m. After this he turned right and after going 30 m he reached to his uncle's house. His father was not there. From there he went 100 m to his north and met his father in a street. How far did he meet his father from the starting point ?
(A) 80 m (B) 100 m
(C) 140 m (D) 260 m
(E) None of these

6. Rohit walked 25 m towards south. Then he turned to his left and walked 20 m. He then turned to his left and walked 25 m. He again turned to his right and walked 15 m. At what distance is he from the starting point and in which direction ?
(A) 35 m East (B) 35 m North
(C) 40 m East (D) 60 m East
(E) None of these

7. Rasik walks 20 m North. Then he turns right and walks 30 m. Then he turns right and walks 35 m. Then he turns left and walks 15 m. Finally he turns left and walks 15 m. In which direction and how many metres is he from the starting position ?
(A) 15 m West (B) 30 m East
(C) 30 m West (D) 45 m East
(E) None of these

8. From his house, Lokesh went 15 km to the North. Then he turned west and covered 10 km. Then he turned south and covered 5 km. Finally turning to the east, he covered 10 km. In which direction is he from his house ?
(A) East (B) West
(C) North (D) South
(E) None of these

9. One morning after sunrise, Vimal started to walk. During this walking he met Stephen who was coming from opposite direction. Vimal watched that the shadow of Stephen to the right of him (Vimal). To which direction Vimal was facing ?
(A) East (B) West
(C) South (D) Data inadequate
(E) None of these

10. P started from his house towards west. After walking a distance of 25 m. He turned to the right and walked 10 m. He then again turned to the right and walked 15 m. After this he is to turn to his right at 135° and to cover 30 m, in which direction should he go ?
(A) West (B) South
(C) South-West (D) South-East
(E) None of these

11. One morning Sujata started to walk towards the Sun. After covering some distance she turned to the right then again to the right and after covering some distance she again turns to the right. Now in which direction is she facing ?
(A) North (B) South
(C) North-East (D) South-West
(E) None of these

12. X started to walk straight towards south. After walking 5 m he turned to the left and walked 3 m. After this he turned to the right and walked 5 m. Now to which direction X is facing ?
(A) North-East (B) South
(C) North (D) South-West
(E) None of these

13. Four friends A, B, C and D live in a same locality. The house of B is in the east of A's house but in the north of C's house. The house of C is in the west of D's house. D's house is in which direction of A's house ?
(A) South-East (B) North-East
(C) East (D) Data is inadequate
(E) None of these

14. Rahul put his time-piece on the table in such a way that at 6 p.m. hour-hand points to North. In which direction the minute-hand will point at 9·15 p.m. ?
(A) South-East (B) South
(C) North (D) West
(E) None of these

15. Starting from the point X, Jayant walked 15 m towards west. He turned left and walked 20 m. He then turned left and walked 15 m. After this he turned to his right and walked 12 m. How far and in which direction is now Jayant from X ?
(A) 32 m, South (B) 47 m, East
(C) 42 m, North (D) 27 m, South
(E) None of these

16. Shyam walks 5 km towards East and then turns left and walks 6 km. Again he turns right and walks 9 km. Finally he turns to his right and walks 6 km. How far is he from the starting point ?
(A) 26 km (B) 21 km

(C) 14 km (D) 9 km
(E) None of these

17. A man walks 2 km towards North. Then he turns to East and walks 10 km. After this he turns to North and walks 3 km. Again he turns towards East and walks 2 km. How far is he from the starting point ?
(A) 10 km (B) 13 km
(C) 15 km (D) 17 km
(E) None of these

18. Umesh directly went from P to Q which is 9 ft. distant. Then he turns to the right and walked 4 ft. After this he turned to the right and walked a distance which is equal from P to Q. Finally he turned to the right and walked 3 ft. How far is he now from P ?
(A) 6 ft. (B) 5 ft.
(C) 1 ft. (D) 0 ft.
(E) None of these

19. Reena walked from A to B in the East 10 ft. Then she turned to the right and walked 3 ft. Again she turned to the right and walked 14 ft. How far is she from A ?
(A) 4 ft. (B) 5 ft.
(C) 24 ft. (D) 27 ft.
(E) None of these

20. A walks 5 km toward south and then turns to the right. After walking 3 km he turns to the left and walks 5 km. Now in which direction is he from the starting place ?
(A) West (B) South
(C) North (D) East
(E) None of these

21. The length and breadth of a room are 8 m and 6 m respectively. A cat runs along all the four walls and finally along a diagonal in order to catch a rat. How much total distance is covered by the cat ?
(A) 10 (B) 14
(C) 38 (D) 48
(E) None of these

22. Y is in the East of X which is in the North of Z. If P is in the South of Z, then in which direction of Y, is P ?
(A) North (B) South
(C) South-East (D) North-East
(E) None of these

23. One morning after sunrise, Gangadhar was standing facing a pole. The shadow of the pole fell exactly to his right. To which direction was he facing ?
(A) East (B) South
(C) West (D) Data is inadequate
(E) None of these

24. One day at 2 p.m. Manisha and Madhuri were talking to each other face to face at M. G. Road Bhopal. If Manisha's shadow was exactly to the left of Madhuri, which direction Manisha was facing ?
(A) North (B) South
(C) East (D) Data is inadequate
(E) None of these

25. X walks a distance of 5 m towards south. Then she turns to the left and walks 3 m. After this she turns to the right and walks 5 m. Now in which direction is she facing ?
(A) North-East (B) South
(C) North (D) South-West
(E) None of these

26. Some boys are sitting in three rows all facing North such that A is in the middle row. P is just to the right of A but in the same row. Q is just behind of P while R is in the North of A. In which direction of R is Q ?
(A) South (B) South-West
(C) North–East (D) Data is inadequate
(E) None of these

Directions—(Q. 27 and 28) Dev, Kumar, Nilesh, Ankur and Pintu are standing facing to the North in a playground such as given below :
(i) Kumar is at 40 m to the right of Ankur.
(ii) Dev is at 60 m in the South of Kumar.
(iii) Nilesh is at a distance of 25 m in the West of Ankur.
(iv) Pintu is at a distance of 90 m in the North of Dev.

27. Which one is in the North–East of the person, who is to the left of Kumar ?
(A) Dev (B) Nilesh
(C) Ankur (D) Nilesh or Dev
(E) None of these

28. If a boy starting from Nilesh, met to Ankur and then to Kumar and after this he to Dev and then to Pintu and whole the time he walked in a straight line, then how much total distance did he cover ?
(A) 215 m (B) 155 m
(C) 245 m (D) 185 m
(E) None of these

29. K is 40 m South-West of L. If M is 40 m South–East of L, then M is in which direction of K ?
(A) East (B) West
(C) North–East (D) South
(E) None of these

30. Hemant in order to go to university started from his house in the east and came to a crossing. The road to the left ends in a theatre, straight ahead is the hospital. In which direction is the university ?
(A) North (B) South
(C) East (D) West
(E) None of these

31. Two cars start from the opposite places of a main road, 150 km apart. First car runs for 25 km. and takes a right turn and then runs 15 km. It then turns left and runs for another 25 km and then takes the direction to reach the main road. In the mean time, due to a minor break down the other car has run

only 35 km along the main road. What would be the distance between the two cars at this point ?

(A) 65 km (B) 75 km
(C) 80 km (D) 85 km
(E) None of these

32. After walking 6 km, I turned to the right and then walked 2 km. After then I turned to the left and walked 10 km. In the end, I was moving towards the North. From which direction did I start my journey ?

(A) North (B) South
(C) East (D) West
(E) None of these

33. If South-East becomes North, North-East becomes West and so on. What will West become ?

(A) North-East (B) North-West
(C) South-East (D) South-West
(E) South

34. A boy rode his bicycle Northward, then turned left and rode 1 km and again turned left and rode 2 km. He found himself one km west of his starting point. How far did he ride northward initially ?

(A) 1 km (B) 2 km
(C) 3 km (D) 5 km
(E) None of these

35. One morning after sunrise Nivedita and Niharika were talking to each other face to face at Dalphin crossing. If Niharika's shadow was exactly to the right of Nivedita, which direction Niharika was facing ?

(A) North (B) South
(C) East (D) Data is inadequate
(E) None of these

36. One evening before sunset Rekha and Hema were talking to each other face to face. If Hema's shadow was exactly to the right of Hema, which direction was Rekha facing ?

(A) North (B) South
(C) West (D) Data is inadequate
(E) None of these

37. Amit started walking positioning his back towards the sun. After some time, he turned left, then turned right and towards the left again. In which direction is he going now ?

(A) North or South (B) East or West
(C) North or West (D) South or West
(E) None of these

38. One morning Udai and Vishal were talking to each other face to face at a crossing. If Vishal's shadow was exactly to the left of Udai, which direction was Udai facing ?

(A) East (B) West
(C) North (D) South
(E) None of these

39. Golu started from his house towards North. After covering a distance of 8 km he turned towards left and covered a distance of 6 km. What is the shortest distance now from his house ?

(A) 10 km (B) 16 km
(C) 14 km (D) 2 km
(E) None of these

Directions—(Q. 40–44) Each of these questions is based on the following information :

(i) Six flats on a floor in two rows facing North and South are allotted to P, Q, R, S, T and U.

(ii) Q gets a North facing flat and is not next to S.

(iii) S and U get diagonally opposite flats.

(iv) R is next to U, gets a south facing flat and T gets a North facing flat.

40. Which of the following combinations get south facing flats ?

(A) QTS (B) UPT
(C) URP (D) Data is inadequate
(E) None of these

41. Whose flat is between Q and S ?

(A) T (B) U
(C) R (D) P
(E) Data is inadequate

42. If the flats of P and T are interchanged then whose flat will be next to that of U ?

(A) P (B) Q
(C) R (D) T
(E) None of these

43. The flats of which of the other pair than SU, is diagonally opposite to each other ?

(A) QP (B) QR
(C) PT (D) TS
(E) None of these

44. To arrive at the answers to the above questions which of the following statements can be dispensed with ?

(A) Only (i) (B) Only (ii)
(C) Only (iii) (D) None
(E) None of these

Directions—(Q. 45–47) Each of three questions is based on the following information :

(i) 8 trees—mango, guava, papaya, pomegranate, lemon, banana, raspberry and apple are in two rows 4 in each facing North and South.

(ii) Lemon is between mango and apple but just opposite to guava

(iii) Banana is at one end of a line and is just next in the right of guava or either banana tree is just after guava tree.

(iv) Raspbarry tree which is at one end of a line, is just diagonally opposite to mango tree.

45. Which tree is just opposite to banana tree ?

(A) Mango (B) Pomegranate

(C) Papaya (D) Data is inadequate
(E) None of these

46. Which tree is just opposite to raspberry tree ?
(A) Papaya
(B) Pomegranate
(C) Papaya or Pomegranate
(D) Data is inadequate
(E) None of these

47. Which of the following statements is definitely true ?
(A) Papaya tree is just near to apple tree
(B) Apple tree is just next to lemon tree
(C) Raspberry tree is either left to Pomegranate or after
(D) Pomegranate tree is diagonally opposite to banana tree
(E) None of these

48. Village Q is to the north of the village P. The village R is in the east of the village Q. The village S is to the left of the village P. In which direction is the village S with respect to village R ?
(A) West (B) South–West
(C) South (D) North–West
(E) None of these

49. If A × B means A is to the South of B
A + B means A is to the North of B
A ÷ B means A is to the East of B
A – B means A is to the West of B
then in P ÷ Q + R – S, S is in which direction with respect to Q ?
(A) South–west (B) South–east
(C) North–east (D) North–west
(E) None of these

Directions—(Q. 50–52) Each of the following questions is based on the following information :
(i) A # B means B is at 1 metre to the right of A.
(ii) A $ B means B is at 1 metre to the North of A.
(iii) A * B means B is at 1 metre to the left of A.
(iv) A £ B means B is at 1 metre to the south of A.
(v) In each question first person from the left is facing North.

50. According to P # R $ A * U, in which direction is U with respect to P ?
(A) East (B) West
(C) North (D) South
(E) None of these

51. According to X £ B * Y, Y is in which direction with respect to X ?
(A) North (B) South
(C) North-East (D) South-East
(E) South-West

52. According to M # N $T, T is in which direction with respect to M ?
(A) North–West (B) North–East
(C) South–West (D) South–East
(E) None of these

53. 'K' walked 5 metre towards North, took a left turn and walked for 10 metre. He then took a right turn and walked for 20 metre and again took right turn and walked 10 metre. How far he is from the starting point ?
(A) 20 metre (B) 15 metre
(C) 25 metre (D) 30 metre
(E) None of these

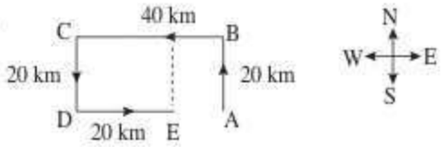
54. Rohan walked 50 metres towards East, took a right turn and walked 30 metres. Towards which direction is he now from his starting position ?
(A) South-West (B) North-East
(C) North-West (D) South-East
(E) None of these

55. In a row of children facing North, Shamika is third to the right of Nikhil who is seventeenth from the right end of the row. Ravi is fifth to the left of Shamika and is twentieth from the left end. Total how many children are there in the row ?
(A) 39 (B) 38
(C) 37 (D) Cannot be determined
(E) None of these

56. M is towards East of D which is towards South of R, N is towards South of M, R is towards which direction of N ?
(A) West (B) North-East
(C) East (D) North-West
(E) None of these

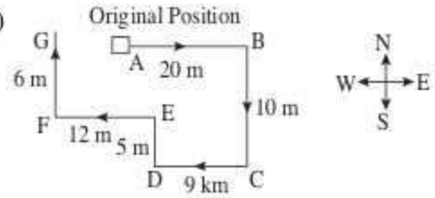
Answers with Explanations

1. (A)



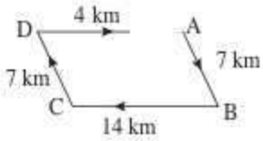
∴ Reqd. distance = 40 – 20 = 20 km

2. (C)

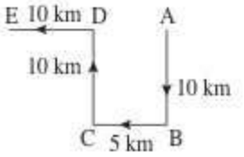


∴ It is clear that the rat will face towards North.

3. (C) Reqd. distance = AE
= 14 – 4
= 10 km



4. (B) Reqd. distance = AE
= 5 + 10
= 15 km



5. (B) Reqd. distance = AE

$= \sqrt{AG^2 + EG^2}$

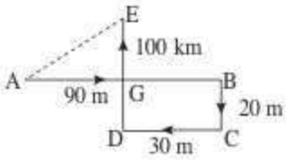
$= \sqrt{(90 - 30)^2 + (100 - 20)^2}$

$= \sqrt{(60)^2 + (80)^2}$

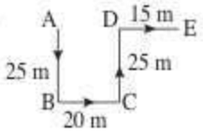
$= \sqrt{3600 + 6400}$

$= \sqrt{10000}$

$= 100$ m

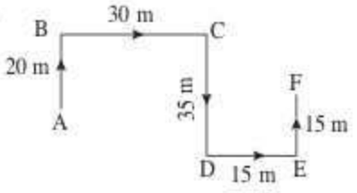


6. (A)



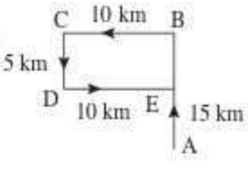
Reqd. distance = AE
= 20 + 15
= 35 m towards east

7. (D)



Reqd. distance = AF
= 30 + 15
= 45 m towards east

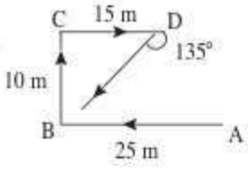
8. (C)



∴ It is clear that he is in the North from his house.

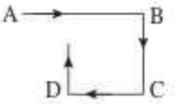
9. (C) Sun rises in the east in the morning. So the shadow of a man will always falls towards the west. Since the shadow of Stephen is to the right of Vimal. Hence Vimal is facing towards South.

10. (C)



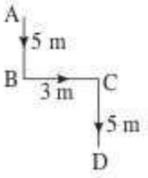
Hence he should go in the South-West direction.

11. (A)



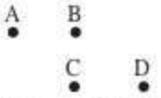
Hence finally Sujata will face towards North.

12. (B)



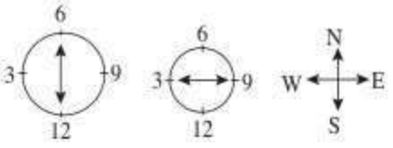
Hence X will face in the end towards South.

13. (A)



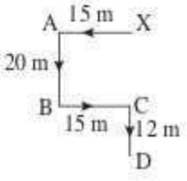
∴ D's house is in the South-East direction of A.

14. (D)



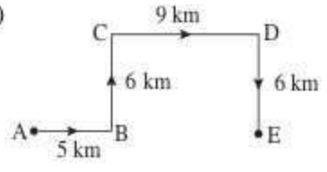
At 9.15 p.m., the minute hand will point towards west.

15. (A)



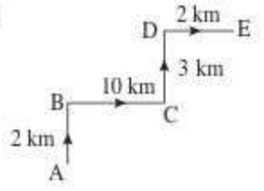
Reqd. distance = 20 + 12 = 32 m in south direction.

16. (C)



Reqd. distance AD = 5 + 9 = 14 km

17. (E)

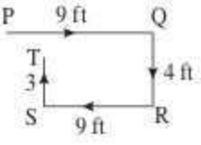


Reqd. distance = AC + q CE

$= \sqrt{2^2 + 10^2} + \sqrt{3^2 + 2^2}$

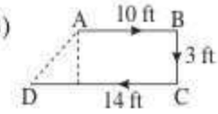
= 13·8 km

18. (C)



Reqd. distance = PT = 4 – 3 = 1 ft.

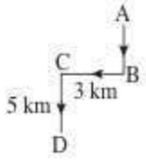
19. (B)



Reqd. distance AD $= \sqrt{3^2 + (14-10)^2}$

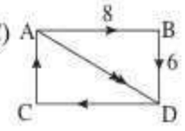
$= \sqrt{9+16} = 5$ ft.

20. (E)



Hence reqd. direction is South-West.

21. (C)

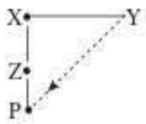


Reqd. distance $= 8+6+8+6+\sqrt{8^2+6^2}$

$= 28 + \sqrt{100}$

$= 28 + 10 = 38$ m

22. (E)

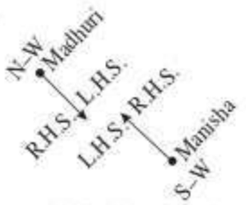


P is in South-West of Y.

23. (B) Sun rises in the east in the morning. Since the shadow of Gangadhar falls to his right. So he is facing South.

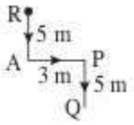
24. (E) Manisha's shadow at 2 p.m. is exactly to the left of Madhuri. Then Madhuri should be facing towards South-East. Hence then Manisha must be facing toward North-East. At 2 p.m. sun rays are oblique. Hence shadow will also be oblique.

25. (B)



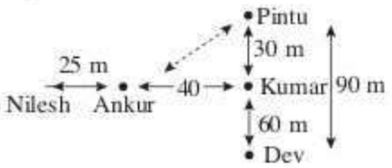
Hence X is facing South.

26. (E)



∴ Q is in the South-East of R.

27. (E)

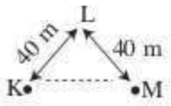


Ankur is in the left of Kumar. Hence Pintu is in North-East of Ankur.

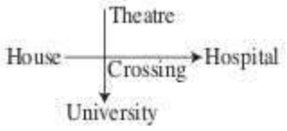
28. (A) Reqd. distance $= 25\text{ m} + 40\text{ m} + 60\text{ m} + 90\text{ m}$

$= 215$ m

29. (A) Hence M is in the East of K.

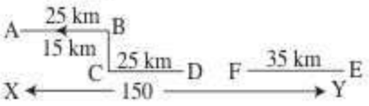


30. (B)



∴ University is in South.

31. (A)



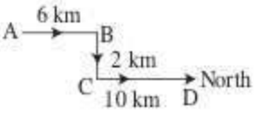
Reqd. distance = DF

$= 150 - (25 + 25 + 35)$

$= 150 - 85$

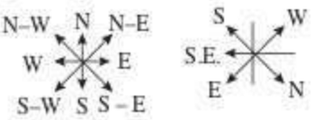
$= 65$ km

32. (B)



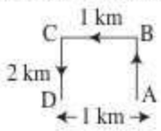
The journey was started from the South.

33. (C)



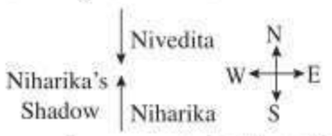
It is clear from the diagrams that new name of West will become South-East.

34. (B)

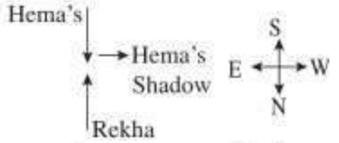


∴ The boy rode 2 km. Northward.

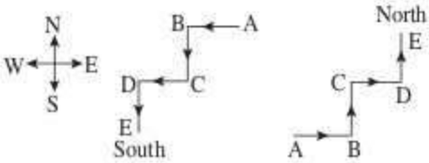
35. (A) In the morning sun rises in the East. Hence then any shadow falls in the West. Since Niharika's shadow was exactly to the right of Nivedita. Hence Niharika is facing toward North.



36. (B) In the evening sun sets in West. Hence then any shadow falls in the East. Since Hema's shadow was to the right of Hema. Hence Rekha was facing towards South.

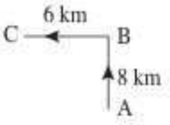


37. (A) In the morning In the evening



If he starts walking the morning then finally he will face towards South and if he starts in evening then finally he will face towards North.

38. (C)

39. (A) 

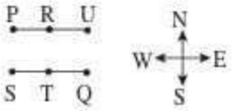
Reqd. distance = AC

$= \sqrt{(8)^2 + (6)^2}$

$= \sqrt{64 + 36}$

$= \sqrt{100} = 10$ km

For Question 40 to 43 :

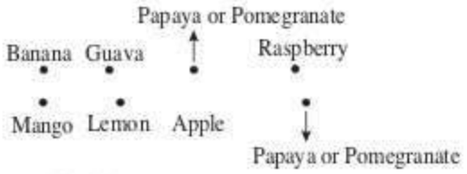


40. (C) 41. (A)

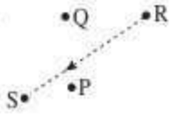
42. (C)

43. (A) 44. (D)

For Question 45 to 47 :

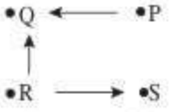


45. (A) 46. (C) 47. (B)

48. (B) 

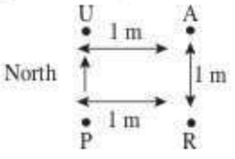
S is to the South–West of R.

49. (B) According to P ÷ Q + R – S

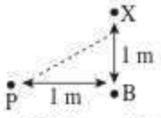


∴ S is in the South–East of Q.

50. (C) According to P # R $ A * U

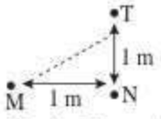


51. (E) According to 0

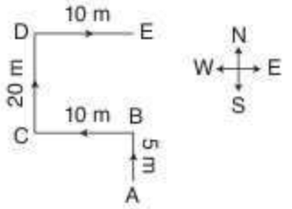


Hence Y is in South-West of X.

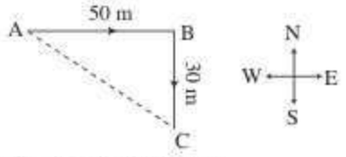
52. (B) According to M # N $ T



Hence T is in the North–East of M.

53. (C) 

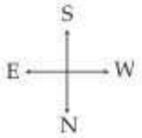
54. (D) Route of Rohan is shown below :



∴ C is in the South-East of A.

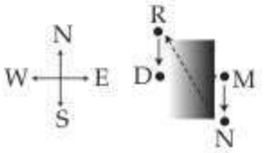
55. (B) 13 + ● ● ● ● ● ● + 19

Shamika Nkhil Ravi

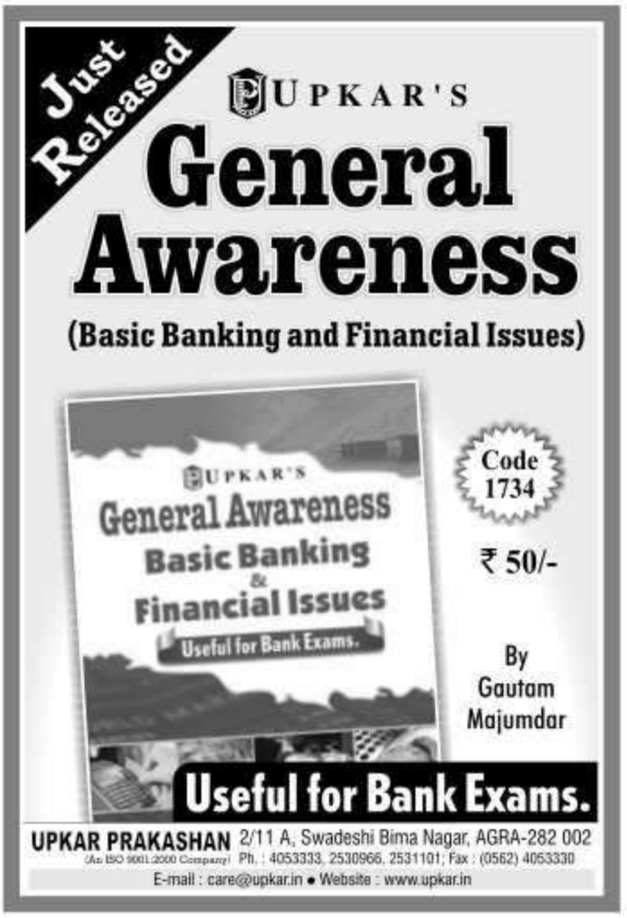


∴ Total no. of children = 13 + 1 + 3 + 2 + 19 = 38

56. (D)



∴ R is in North-West of N.



Seating Arrangement

In such questions, first of all diagram should be made. By doing so questions are easily and quickly solved.

Example 1. (a) 6 boys are sitting in a circle facing towards the centre of the circle.

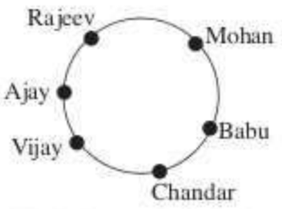
(b) Rajeev is sitting to the right of Mohan but he is not just at the left of Vijay.

(c) Chandar is between Babu and Vijay.

(d) Ajay is sitting to the left of Vijay.

Who is sitting to the left of Mohan ?

Solution :



Hence, Babu is sitting to the left of Mohan.

Example 2. (a) Eleven students A, B, C, D, E, F, G, H, I, J and K are sitting in the first line facing to the teacher.

(b) D who is just to the left of F, is to the right of C at second place.

(c) A is second to the right of E who is at one end.

(d) J is the nearest neighbour of A and B and is to the left of G at third place.

(e) H is next to D to the right and is at the third place to the right of I.

Who is just in the middle ?

Solution :

Teacher

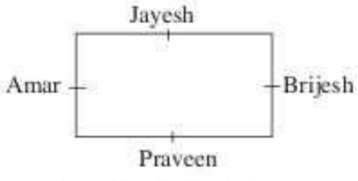
• • • • • • • • • • •

E K A J B I G C H D F

Hence, I is just in the middle.

Example 3. Brijesh, Jayesh, Amar and Praveen are playing cards. Amar is to the right of Jayesh who is to the right of Brijesh. Who is to the right of Amar ?

Solution :



Hence Praveen is to the right of Amar.

Example 4. (a) A, B and C are three boys while R, S and T are three girls. They are sitting such that the boys are facing the girls.

(b) A and R are diagonally opposite to each other.

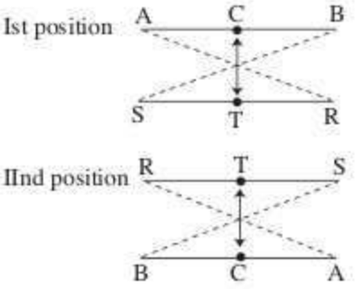
(c) C is not sitting at any of the ends.

(d) T is left to R but opposite to C.

(i) Who is sitting opposite to B ?

(ii) Who is sitting diagonally opposite to B ?

Solution :



(i) Hence, R is sitting opposite to B.

(ii) S is sitting diagonally opposite to B.

Exercise

1. A, P, R, X, S and Z are sitting in a row. S and Z are in the centre. A and P are at the ends. R is sitting to the left of A. Who is to the right of P ?

   (A) A (B) X

   (C) S (D) Z

   (E) None of these

2. A, B, C, D and E are sitting on a bench. A is sitting next to B, C is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position A is sitting ?

   (A) Between B and D (B) Between B and C

   (C) Between E and D (D) Between C and E

   (E) None of these

Directions—(Q. 3–5) P, Q, R, S, T, U, V and W are sitting round the circle and are facing the centre :

(i) P is second to the right of T who is the neighbour of R and V.

(ii) S is not the neighbour of P.

(iii) V is the neighbour of U.

(iv) Q is not between S and W. W is not between U and S.

3. What is the position of S ?

   (A) Between U and V

   (B) Second to the right of P

   (C) To the immediate right of W

   (D) Data inadequate

   (E) None of these

4. Which two of the following are not neighbours ?
   (A) RV (B) UV
   (C) RP (D) QW
   (E) None of these

5. Which of the following is correct ?
   (A) P is to the immediate right of Q
   (B) R is between U and V
   (C) Q is to the immediate left of W
   (D) U is between W and S
   (E) None of these

Directions—(Q. 6 and 7) Five girls are sitting on a bench to be photographed. Seema is to the left of Rani and to the right of Bindu. Mary is to the right of Rani. Reeta is between Rani and Mary.

6. Who is second from the left in photograph ?
   (A) Reeta (B) Mary
   (C) Bindu (D) Seema
   (E) Rani

7. Who is second from the right ?
   (A) Mary (B) Rani
   (C) Reeta (D) Bindu
   (E) Seema

Directions—(Q. 8 and 9) Six friends are sitting in a circle and are facing the centre of the circle. Deepa is between Prakash and Pankaj. Priti is between Mukesh and Lalit. Prakash and Mukesh are opposite to each other.

8. Who is opposite to Priti ?
   (A) Prakash (B) Deepa
   (C) Pankaj (D) Lalit
   (E) None of these

9. Who is just right to Pankaj ?
   (A) Deepa (B) Lalit
   (C) Prakash (D) Priti
   (E) None of these

Directions—(Q. 10–14) Each of the following questions is based on the information given below—

In an exhibition seven cars of different companies—Cadillac Ambassador, Fiat, Maruti, Mercedes, Bedford and Fargo are standing facing to east in the following order—

(i) Cadillac is next to right of Fargo.
(ii) Fargo is fourth to the right of Fiat.
(iii) Maruti car is between Ambassador and Bedford.
(iv) Fiat which is third to the left of Ambassador, is at one end.

10. Which one of the following is the correct position of Mercedes ?
   (A) Next to the left of Cadillac
   (B) Next to the left of Bedford
   (C) Between Bedford and Fargo
   (D) Fourth to the right of Maruti
   (E) None of these

11. Which one of the following statements is correct ?
   (A) Fargo car is between Ambassador and Fiat
   (B) Cadillac is next left to Mercedes car
   (C) Fargo is next right of Cadillac
   (D) Maruti is fourth right of Mercedes
   (E) None of these

12. Which of the cars are on both the sides of Cadillac car ?
   (A) Ambassador and Maruti
   (B) Maruti and Fiat
   (C) Fargo and Mercedes
   (D) Ambassador and Fargo
   (E) None of these

13. Which of the following statements is correct ?
   (A) Maruti is next left of the Ambassador
   (B) Bedford is next left of Fiat
   (C) Bedford is at one end
   (D) Fiat is next second to the right of Maruti
   (E) None of these

14. Which of the following groups of cars is to the right of Ambassador ?
   (A) Cadillac, Fargo and Maruti
   (B) Mercedes, Cadillac and Fargo
   (C) Maruti, Bedford and Fiat
   (D) Bedford, Cadillac and Fargo
   (E) None of these

Directions—(Q. 15–18) Each of the following questions is based on the information given below—

Six friends A, B, C, D, E and F are sitting around the hexagonal table each at one corner. A is second to the left of F. B is the neighbour of C and D. E is second to the left of D.

15. Which of the following is sitting opposite to E ?
   (A) C
   (B) B
   (C) Cannot be determined
   (D) D
   (E) None of these

16. Out of the five, four pairs alike. Find odd one—
   (A) B, D (B) A, C
   (C) E, F (D) E, A
   (E) C, B

17. Which of the following are the neighbouring A ?
   (A) F and A (B) E and C
   (C) F and C (D) Data inadequate
   (E) None of these

18. Who is fourth person left of B ?
   (A) A (B) F
   (C) C (D) Data inadequate
   (E) None of these

Directions—(Q. 19–23) Each of these questions is based on the information given below—

(i) A, B, C, D and E are five men sitting in a line facing to south—while M, N, O, P and Q are

five ladies sitting in a second line parallel to the first line and are facing to North.

(ii) B who is just next to the left of D, is opposite to Q.

(iii) C and N are are diagonally opposite to each other.

(iv) E is opposite to O who is just next right of M.

(v) P who is just to the left of Q, is opposite to D.

(vi) M is at one end of the line.

19. Who is sitting third to the right of O ?
(A) Q (B) N
(C) M (D) Data inadequate
(E) None of these

20. Which of the following pair is diagonally opposite to each other ?
(A) EQ (B) BO
(C) AN (D) AM
(E) None of these

21. If B shifts to the place of E, E shifts to the place of Q, and Q shifts to the place of B, then who will be the second to left of the person opposite to O ?
(A) Q (B) P
(C) E (D) D
(E) None of these

22. If O and P, A and E and B and Q interchange their positions, then who will be second person to the right of the person who is opposite to the person second of the right of P ?
(A) D (B) A
(C) E (D) O
(E) None of these

23. In the original arrangement who is sitting just opposite to N ?
(A) B (B) A
(C) C (D) D
(E) A

Directions—(Q. 24–27) (i) A, B, C, D, E, F, and G are sitting in a row facing North—

(ii) F is to the immediate right of E

(iii) E is 4th to the right of G

(iii) C is the neighbour B and D

(iv) Person who is third to the left of D is at one of ends.

24. What is the position of A ?
(A) Between E and D (B) Extreme left
(C) Centre (D) Extreme right
(E) None of these

25. Who are to the left of C ?
(A) Only B (B) G, B and D
(C) G and B (D) D, E, F, and A
(E) None of these

26. Who are the neighbour of B ?
(A) C and D (B) C and G
(C) G and F (D) C and E
(E) F and A

27. Which of the following statements is not true ?
(A) E is to the immediate left of D
(B) A is at one of the ends
(C) G is to the immediate left of B
(D) F is second to the right of D.
(E) None of these

Directions—(Q. 28–32) Each of these questions is based on the information given below—

(i) 8 persons E, F, G, H, I, J, K and L are seated around a square table—two on each side.

(ii) There are 3 ladies who are not seated next to each other.

(iii) J is between L and F.

(iv) G is between I and F.

(v) H, a lady member is second to the left of J.

(vi) F, a male member is seated opposite to E, a lady member.

(vii) There is a lady member between F and I.

28. Who among the following is seated between E and H ?
(A) F (B) I
(C) J (D) Cannot be determined
(E) None of these

29. How many persons are seated between K and F ?
(A) 1 (B) 2
(C) 3 (D) 4
(E) None of these

30. Who among the following are three lady members ?
(A) E, H and J (B) E, F and G
(C) E, H and G (D) C, H and J
(E) None of these

31. Who among the following is to the immediate left of F ?
(A) G (B) I
(C) J (D) H
(E) None of these

32. What is true about J and K ?
(A) J is male, K is female
(B) J is female, K is male
(C) Both are female
(D) Cannot be determined
(E) Both are male

Directions—(Q. 33–36) In a class there are seven students (including boys and girls) A, B, C, D, E, F and G. They sit on three benches I, II and III such that at least two students on each bench and at least one girl on each bench. C who is a girl student, does not sit with A, E and D. F the boy student sits with only B. A sits on the bench I with his best friends. G sits on the bench III. E is the brother of C ?

33. How many girls are there. Out of these 7 students ?
(A) 3 (B) 4
(C) 3 or 4 (D) Data inadequate
(E) None of these

34. Who sits with C ?
(A) B (B) D
(C) G (D) E
(E) None of these

35. Which of the following is the group of girls ?
(A) BAC (B) BCD
(C) BFC (D) CDF
(E) None of these

36. On which bench there are three students ?
(A) I (B) II
(C) III (D) I or II
(E) None of these

Direction—There are 8 houses in a line and in each house only one boy lives with the conditions as given below—

(i) Jack is not the neighbour of Siman.
(ii) Harry is just next to the left of Larry.
(iii) There is at least one to the left of Larry.
(iv) Paul lives in one of the two houses in the middle.
(v) Mike lives in between Paul and Larry.

37. If at least one lives to the right of Robert and Harry is not between Jaud and Larry, then which one of the following statement is not correct ?
(A) Robert is not at the left end
(B) Robert is in between Siman and Jaud
(C) Jaud is in between Paul and Jack
(D) There are three persons to the right of Paul
(E) None of these

Directions—(Q. 38–40) Each of the following questions is based on the information given below—

Six girl are sitting in a circle facing to the centre of the circle. There quires are : P, Q, R, S, T and V. T is not between Q and S but some other one. P is next to the left of V. R is 4th to the right of P.

38. Which of the following statement is not true ?
(A) S is just next to the right to R
(B) T is just next to the right of V
(C) R is second to the left of T
(D) P is second to the right of R
(E) None of these

39. What is the position of T ?
(A) Cannot be determined
(B) Just next to the right of Q
(C) Second to the left of P
(D) Between Q and R
(E) None of these

40. If P and R interchange their positions then which of the following pair will sit together ?
(A) R-T (B) P-V
(C) V-R (D) Q-V
(E) None of these

Directions—(Q. 41–46) Study the following information carefully and answer the questions given below—

P, Q, R, S, T, V, W and Z are sitting around a circle facing at the centre. R is third to the left of P who is second to the left of Z. S is third to the left of Q who is not an immediate neighbour of either Z or R. T is second to the right of V.

41. In which of the following groups is the first person sitting in between the second and the third person ?
(A) S R W (B) R W Q
(C) Z T S (D) V Z P
(E) None of these

42. Who is the immediate right of S ?
(A) R (B) T
(C) W (D) Data inadequate
(E) None of these

43. Who is third to the right of V ?
(A) T (B) Q
(C) S (D) Data inadequate
(E) None of these

44. Who is second to the left of W ?
(A) Q (B) P
(C) V (D) S
(E) None of these

45. What is P's position with respect to S ?
(A) Fourth to the left (B) Third to the left
(C) Fifth to the left (D) Fifth to the right
(E) Third to the right

46. In which of the following pairs is the second person sitting to the immediate left of the first person ?
(A) R W (B) Q W
(C) Q P (D) V Z
(E) None of these

Directions–(Q. 47–53) Study the following information carefully and answer the questions given below—

A, B, C, D, E, F, G and H are sitting around a circle facing the centre. C is fourth to the left of F who is fifth to right of E. D is third to the right of A who is not immediate neighbour of E or F. B is third to left of H who is not immediate neighbour of E.

47. Four of the following five are alike in a certain way based on their positions in the above sitting arrangement and so form a group. Which is the one that does not belong to that group ?
(A) HFE (B) DCG
(C) BHF (D) AEF
(E) CGB

48. Who is between D and E ?
(A) C (B) B
(C) A (D) Data inadequate
(E) None of these

49. Which of the following pairs are sitting between A and D ?
(A) FB (B) GB
(C) FG (D) FE
(E) GE

50. Who is third to the right of E ?
(A) B (B) F
(C) D (D) G
(E) None of these

51. Who is to the immediate right of A ?
(A) G (B) B
(C) F (D) Data inadequate
(E) None of these

52. What is D's position with respect to B ?
(a) Immediate right (b) Fourth to the right
(c) Third to the left (d) Immediate left
(A) Only (a) (B) Only (b)
(C) Only (b) and (c) (D) Only (d)
(E) Only either (a) or (d)

53. In which of the following pairs is the first person sitting to the immediate left of the second person ?
(A) CH (B) GA
(C) BD (D) FG
(E) None of these

Directions—(Q. 54–58) These questions are based on the following information—

Eight persons L, M, N, P, Q, R, S and T are sitting around a circular table facing the centre. Q is not the neighbour of P or R. M is second to the left of T and third to the right of P. R is third to the left of N who is to the immediate left of T. L is second to the right of P.

54. Who is to the immediate left of P ?
(A) S (B) R
(C) Q (D) L
(E) None of these

55. In which of the following pairs of persons the second person is to the immediate left of the first person ?
(A) QS (B) NT
(C) ML (D) RL
(E) None of these

56. Which of the following pairs of persons represent the neighbours of T ?
(A) MN (B) QS
(C) RP (D) ML
(E) None of these

57. Who is to the immediate right of T ?
(A) R (B) S
(C) N (D) Q
(E) None of these

58. Which of the following is definitely true ?
(A) Q is to the immediate right of S
(B) R is to the immediate right of P
(C) M is between N and Q
(D) R is between P and S
(E) None of these

Directions—(Q. 59–64) Study the following information carefully and answer the questions given below—

a, b, c, d, e, f, g, h and i are sitting around a circle facing at the centre. d is third to the left of h who is second to the left of b, a is fourth to the left of e who is second to the right of d. c is third to the right of h. i is not an immediate neighbour of d. g is not an immediate neighbour of e.

59. Who is fourth to the left of f ?
(A) e (B) c
(C) a (D) Data inadequate
(E) None of these

60. Who is second to the right of g ?
(A) f (B) e
(C) c (D) Data inadequate
(E) None of these

61. What is c's position with respect to e ?
(1) Fifth to the right (2) Fifth to the left
(3) Fourth to the right (4) Fourth to the left
(A) (1) only (B) (4) only
(C) (1) and (2) only (D) (1) and (4) only
(E) None of these

62. Who is fourth to the left of g ?
(A) b (B) h
(C) i (D) e
(E) None of these

63. In which of the following pairs is the first person sitting to the immediate right of the second person ?
(A) df (B) fe
(C) gd (D) ag
(E) None of these

64. Who is to the immediate left of e ?
(A) d (B) f
(C) h (D) Data inadequate
(E) None of these

Directions—(Q. 65–69) Study the following information carefully and answer the questions given below—

a, b, c, d, e, f and g are sitting around a circle facing at the centre. d is third to the left of a who is second to the left of f. e is not a neighbour of either f or d. c is third to left of b.

65. What is e's position with respect to f ?
(A) Third to the right (B) Fourth to the left
(C) Second to the left (D) Data inadequate
(E) None of these

66. Who is sitting between g and b ?
(A) f only (B) d only
(C) Both f and d (D) Data inadequate
(E) None of these

67. Who is to the immediate left of d ?
(A) c (B) g
(C) f (D) Data inadequate
(E) None of these

68. Which of the following information represents the first person sitting to the immediate right of the second person ?
(A) ab (B) fg
(C) ce (D) ae
(E) None of these

69. Who is second to the right of d ?
(A) a (B) f
(C) e (D) Data inadequate
(E) None of these

Directions—(Q. 70-75) Study the following information carefully and answer the questions given below—

M, P, D, Q, T, R, B and W are sitting around a circle facing at the centre. D is second to the left of M who is third to the right of P. W is third to the right of Q who is second to the left of B. R is third to the right of T.

70. Who is third to the left of M ?
(A) D (B) W
(C) P (D) Data inadequate
(E) None of these

71. Which of the following pairs represents the immediate neighbours of R ?
(A) BM (B) QW
(C) WM (D) BT
(E) None of these

72. Who is fourth to the right of W ?
(A) T (B) M
(C) Q (D) D
(E) Data inadequate

73. Who is second to the right of M ?
(A) B (B) W
(C) P (D) R
(E) Data inadequate

74. Who is second to the right of P ?
(A) T (B) B
(C) W (D) Data inadequate
(E) None of these

75. In which of the following pairs is the first person sitting to the immediate right of the second person ?
(A) PD (B) WP
(C) BW (D) RQ
(E) MQ

76. In a row of children Mihir is third to the right of Sunil; who is ninth from the left end of the row. What is Sunil's position from the right end of the row ?
(A) Twelfth (B) Thirteenth
(C) Fourteenth (D) Data inadequate
(E) None of these

77. In a row of children, Neeta is fifteenth from the left end of the row. If she is shifted towards the right end of the row by four places, she becomes eighth from the right end. How many children are there in the row ?
(A) 27 (B) 26
(C) 28 (D) 24
(E) None of these

78. In a row of boys Mohan is twentieth from the left end and twelfth from the right end. Pratap is fifteenth from the right end in that row. How many boys are there between Mohan and Pratap ?
(A) 4 (B) 2
(C) 3 (D) 5
(E) None of these

79. In a class of 40 children, Sunetra's rank is eighth from the top. Sujit is five ranks below Sunetra. What is Sujit's rank from the bottom ?
(A) 27 (B) 29
(C) 28 (D) 26
(E) None of these

Answers with Explanations

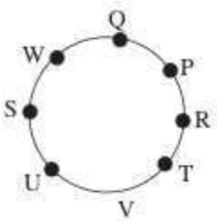
1. (B) The seating arrangement is as follows :

P X S Z R A

2. (B)

E B A C D

For Q. 3 to 5 :



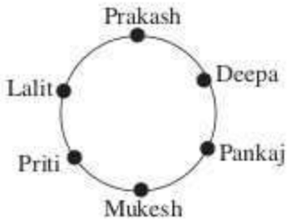
3. (C) 4. (A) 5. (C)

For Q. 6 & 7 :

6. (D) 7. (C)

Bindu Seema Rani Reeta Mary

For Q. 8 & 9 :

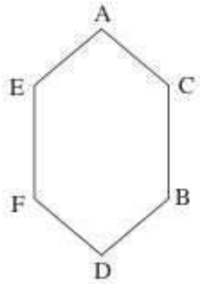


8. (B) 9. (A)

For Q. 10 to 14 :

10. (D) 11. (B) 12. (C) 13. (A) 14. (B)

For Q. 15 to 18 :

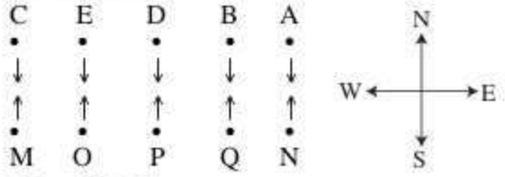


15. (B)

16. (C) All the rest are clockwise neighbours.

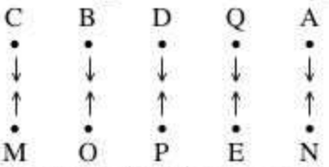
17. (B) 18. (A)

For Q. 19 to 20 :



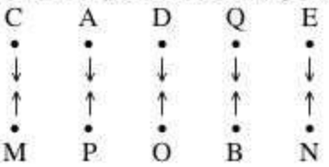
19. (B) 20. (D)

21. (A) New arrangement after shifting



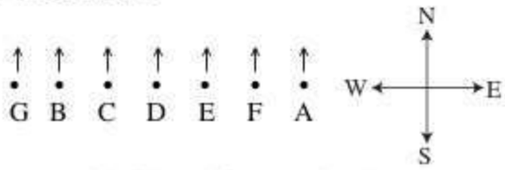
B is opposite to O and second person left to B is Q

22. (B) New arrangement according to the question 22.



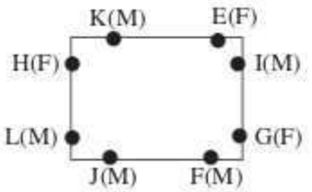
23. (B)

For Q. 24 to 27 :



24. (D) 25. (C) 26. (B) 27. (A)

For Q. 28 to 32 :



Here M = male
and F = Female

Female members are E, G and H.

28. (E) K is seated between E and H

29. (C) Three persons are seated between K and F (H, L and J) or E, I and G.

30. (C) The three lady members are E, H and G.

31. (C) J is to the immediate left of F.

32. (E) Both are male

For Q. 33 to 36 :

Bench I [A] [E] (D)

Bench II [F] (B)

Bench III [G] (C)

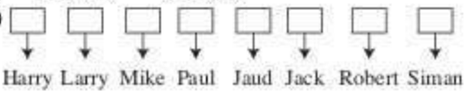
□ Boy

○ Girl

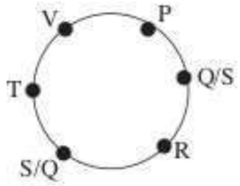
33. (C) The number of girls is either 3 or 4.

34 (C) 35. (B) 36. (A)

37. (C)

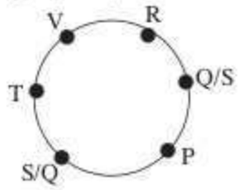


For Q. 38 to 40 :



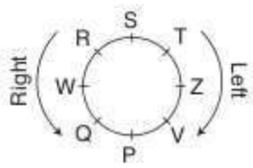
38. (C) 39. (E)

40. (C) After changing the position of P and R



V and T are together.

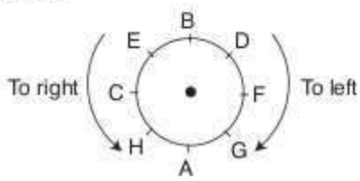
For Solution from Question 41 to 46 :



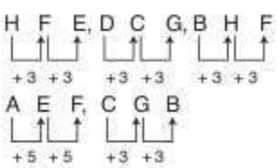
41. (D) 42. (A) 43. (C) 44. (D) 45. (A)

46. (B)

For Q. 47 to 53 :



47. (D)

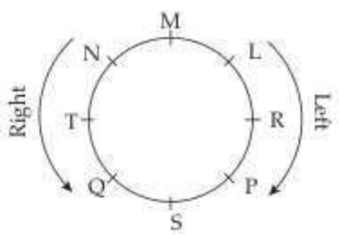


48. (B) 49. (C)

50. (E) A is third to the right of E.

51. (A) 52. (D) 53. (A)

For Q. 54 to 58 : Seating arrangement of 8 persons is shown below—



54. (A) 55. (C) 56. (E) 57. (D) 58. (B)

Continued On Page 180

Blood-Relation

The questions which are asked under this chapter, depend upon **Relation.** Hence, it is necessary for the candidate to have a sound knowledge of the blood relation. To remember easily the relations may be divided into two sides—Paternal side and Maternal side.

1. Relations of Paternal side :

(A) Father's father → Grandfather
(B) Father's mother → Grandmother
(C) Father's brother → Uncle
(D) Father's sister → Aunt
(E) Children of uncle → Cousin
(F) Wife of uncle → Aunt
(G) Children of aunt → Cousin
(H) Husband of aunt → Uncle

2. Relations of Maternal side :

(A) Mother's father → Maternal Grandfather
(B) Mother's mother → Maternal Grandmother
(C) Mother's brother → Maternal Uncle
(D) Mother's sister → Maternal Aunt
(E) Children of maternal uncle → Cousin
(F) Wife of maternal uncle → Maternal Aunt

Following chart will be helpful to understand the relations from one generation to next :

Generation I	Grandfather, grandmother, maternal grandfather, maternal grandmother
↓	
Generation II	Mother, father, uncle, aunt, maternal uncle, maternal aunt
↓	
Generation III	Self, sister, brother-in-law, brother, sister-in-law
↓	
Generation IV	Son, daughter, nephew, niece

Forms of different types of questions with explanation :

Example 1. Pointing to a photograph, Chhoti says to Lalli, "The girl in the photo is the second daughter of the wife of only son of the grandmother of my younger sister." How this girl of photograph is related to Chhoti ?

Solution : By generation charts :

Step I.
↓
↓
Daughter — These are two in number

Step II.
↓
husband-wife
↓
daughter-daughter

Step III. grandmother
↓
husband-wife
↓
daughter-daughter

Step IV. grandmother
↓
husband-wife
↓
daughter-daughter
↓
Chhoti, her sister

Second Method :

(1) Grandmother of younger sister of Chhoti → Grandmother of Chhoti
(2) Wife of only son of grandmother → Mother of Chhoti
(3) Younger daughter of the mother → Younger sister.

Note —While solving the question (+) can be used for male and (–) can be used for female.

Example 2. If A + B means A is the mother of B; A × B means A is the father of B; A $ B means A is the brother of B and A @ B means A is the sister of B then which of the following means that P is the son of Q ?

(A) Q + R @ P @ N (B) Q + R * P @ N
(C) Q × R $ P @ N (D) Q × R $ P $ N

Solution : (D)
Q × R = Q is the mother of R [– Q, ± R]
R $ P = R is the brother of P [+ R, ± P]
P $ N = P is the brother of N [+ P, ± N]
∴ P is the son of Q.

Example 3. A has 3 children. B is the brother of C and C is the sister of D, E who is the wife of A is the mother of D. There is only one daughter of the husband of E. What is the relation between D and B ?

Solution : With the chart :

+ A – E
↓
+ B + D – C

∴ D is a boy because there is only one daughter of E. Hence, B is the brother of D.

Exercise 1

1. A's son B is married with C whose sister D is married to E the brother of B. How D is related to A ?
   (A) Sister (B) Daughter-in-law
   (C) Sister-in-law (D) Cousin
   (E) None of these
2. Anupam said to a lady sitting in a car, "The only daughter of the brother of my wife is the sister-in-law of the brother of your sister." How the husband of the lady is related to Anupam ?
   (A) Maternal uncle (B) Uncle
   (C) Father (D) Son
   (E) Son-in-law
3. Introducing Suchendra, Naman says, "She is the wife of only nephew of only brother of my mother." How Suchendra is related to Naman ?
   (A) Wife (B) Sister
   (C) Sister-in-law (D) Data is inadequate
   (E) Son-in-law
4. Pointing a photograph, X said to Y, "She is the only daughter of the father of my mother." How X is related to the person of photograph ?
   (A) Daughter (B) Son
   (C) Nephew (D) Cannot be decided
   (E) None of these
5. Pointing towards a girl, Abhisek says, "This girl is the daughter of only a child of my father." What is the relation of Abhisek's wife to that girl ?
   (A) Daughter (B) Mother
   (C) Aunt (D) Sister
   (E) None of these
6. Veena who is the sister-in-law of Ashok, is the daughter-in-law of Kalyani. Dheeraj is the father of Sudeep who is the only brother of Ashok. How Kalyani is related to Ashok ?
   (A) Mother-in-law (B) Aunt
   (C) Wife (D) Cousin
   (E) None of these
7. A is the brother of B; B is the brother C; D is the father of A. On the basis of above statements which of the following is not definitely true ?
   (A) A is the brother of C
   (B) C is the brother of A
   (C) A, B and C are the children of D
   (D) B is the son of D
   (E) B is the brother of A
8. Pointing to a person, Deepak said, "His only brother is the father of my daughter's father". How is the person related to Deepak ?
   (A) Father (B) Grandfather
   (C) Uncle (D) Brother-in-law
   (E) B is the brother of A
9. If A is the brother of B; B is the sister of C; and C is the father of D, how D is related to A ?
   (A) Brother
   (B) Sister
   (C) Nephew
   (D) Cannot be determined
   (E) None of these
10. Pointing to Gopi, Nalni says, "I am the daughter of the only son of his grandfather." How Nalni is related to Gopi ?
    (A) Niece
    (B) Daughter
    (C) Sister
    (D) Cannot be determined
    (E) None of these
11. M is the father of N who is the son of V.
    In order to know the relation of M to P, which of the statement/statements is/fare necessary ?
    I. P is the brother of V.
    II. The daughter of N is the grand daughter of V.
    (A) Only I (B) Only II
    (C) Either I or II (D) I and II both
    (E) None of these
12. Pointing to a photograph, Bajpai said, "He is the son of the only daughter of the father of my brother." How Bajpai is related to the man in the photograph ?
    (A) Nephew (B) Brother
    (C) Father (D) Son
    (E) Maternal Uncle
13. Introducing a woman, Shashank said, "She is the mother of the only daughter of my son." How that woman is related to Shashank ?
    (A) Daughter (B) Sister-in-law
    (C) Wife (D) Daughter-in-law
    (E) None of these
14. P is the mother of K; K is the sister of D who is the father of J. How is P related to J ?
    (A) Mother (B) Grandmother
    (C) Aunt (D) Data inadequate
    (E) None of these
15. Pointing to a photograph, Lata says, "He is the son of the only son of my grandfather." How is the man in the photograph related to Lata ?
    (A) Brother (B) Uncle
    (C) Cousin (D) Data is inadequate
    (E) None of these
16. If D is the brother of B, how B is related C ? To answer this question which of the statements is/are necessary ?
    I The son of D is the grandson of C.
    II B is the sister of D.
    (A) Only I (B) Only II
    (C) Either I or II (D) I and II both
    (E) I and II both are insufficient
17. P is the mother of Q who is the husband of R and S who is the sister of Q, is the daughter of T. Which one of the following relation is not true ?
    (A) T is the father of Q

(B) S is the daughter of P
(C) R is the daughter-in-law of T
(D) P is the wife of T
(E) None of these

18. Pointing to a boy in the photograph, Reena said, "He is the only son of the only child of my grandfather." How Reena is related to that boy ?
(A) Mother
(B) Sister
(C) Aunt
(D) Cannot be determined
(E) None of these

19. Pointing to a girl Sandeep said, "She is the daughter of the only sister of my father." How is Sandeep related to the girl ?
(A) Uncle (B) Cousin
(C) Father (D) Grandfather
(E) None of these

20. Pointing to a photograph, Anjali said, "He is the son of the only son of my grandfather". How is the man in the photograph related to Anjali ?
(A) Brother (B) Uncle
(C) Son (D) Data is inadequate
(E) None of these

21. A and B are children of D. Who is the father of A ? To answer this question which of the statements I and II is necessary ?
I C is the brother of A and the son of E.
II F is the mother of B.
(A) Only I (B) Only II
(C) Either I or II (D) I and II both
(E) None of these

22. Pointing to a photograph of a boy, Raman said, "He is the son of the only son of my mother." How is Raman related to that boy ?
(A) Brother (B) Uncle
(C) Cousin (D) Father
(E) None of these

23. Amit said—"This girl is the wife of the grandson of my mother". How is Amit related to the girl ?
(A) Father (B) Grandfather
(C) Husband (D) Father-in-law

24. Pointing to a lady a person said, "The son of her only brother is the brother of my wife." How is the lady related to the person ?
(A) Maternal aunt
(B) Grandmother
(C) Sister of father-in-law
(D) None of these

25. Introducing a man, a woman said, "He is the only son of the mother of my mother." How is the woman related to the man ?
(A) Mother (B) Sister
(C) Niece (D) Maternal aunt

26. Deepak said to Nitin, "That boy playing with the football is the younger of the two brothers of the daughter of my father's wife." How is the boy playing football related to Deepak ?
(A) Son (B) Brother
(C) Cousin (D) Brother-in-law

27. Introducing a boy, a girl said, "He is the son of the daughter of the father of my uncle." How is the boy related to the girl ?
(A) Brother (B) Nephew
(C) Uncle (D) Son-in-law
(E) None of these

28. A is the son of C; C and Q are sisters; Z is the mother of Q and P is the son of Z. Which of the following statements is true ?
(A) P and A are cousins
(B) P is maternal uncle of A
(C) Q is the maternal grandfather of A
(D) C and P are sisters

29. Pointing to a woman, Abhijit said, "Her grand-daughter is the only daughter of my brother." How is the woman related to Abhijit ?
(A) Sister (B) Grandmother
(C) Mother-in-law (D) Mother
(E) Sister-in-law

30. Pointing to a boy, Meena said, "He is the son of my father-in-law's only son". How is the boy related to Meena ?
(A) Nephew (B) Son
(C) Brother (D) Cannot be determiend
(E) None of these

31. Pointing to Veena, Mohan said "She is the daughter of my grandfather's only daughter." How is Mohan related to Veena ?
(A) Brother (B) Cousin
(C) Uncle (D) Data inadequate
(E) None of these

32. Pointing to a girl, Mr. Suraj said "She is the only daughter of my father's son-in-law". How is the girl related to Mr. Suraj ?
(A) Niece (B) Cousin
(C) Sister (D) Daughter
(E) Cannot be determined

33. Pointing to a photograph Seema said 'He is the only grandson of my mother's father-in-law'. How is the man in photograph related to Seema ?
(A) Father (B) Uncle
(C) Cousin (D) Brother
(E) Cannot be determined

34. Pointing to a woman, Suresh said, she is the daughter of my grandfather's only daughter. How is Suresh related to the woman ?
(A) Brother (B) Cousin
(C) Uncle (D) Cannot be determined
(E) None of these

35. A's father is B's son-in-law . C, A's sister is the daughter of P. How is P related to B ?
(A) Daughter (B) Daughter-in-law
(C) Son-in-law (D) Cannot be determined
(E) None of these

36. B is sister of R. M is brother of R. D is mother of R. H is husband of D. How many children does H have ?
(A) Two (B) Three
(C) Four (D) Data inadequate
(E) None of these

37. B is sister of D, D is sister of M. M is brother of K. How is K related to B ?
(A) Brother (B) Sister
(C) Brother or Sister (D) Data inadequate
(E) None of these

Exercise 2

1. If A + B means A is the mother of B; A – B means A is the brother of B; A ÷ B means A is the father of B and A × B means A is the sister of B, which of the following shows that P is the maternal uncle of Q ?
(A) Q – N + M × P (B) P + S × N – Q
(C) P – M + N × Q (D) Q – S ÷ P
(E) None of these

2. If A + B means A is the father of B; A – B means A is the brother of B; A ÷ B means A is the wife of B and A × B means A is the mother of B, which of the following relation shows that M is the maternal grandmother of T ?
(A) M × N ÷ S + T (B) M × N – S ÷ T
(C) M × S – N ÷ T (D) M × N × S ÷ T
(E) None of these

3. In answering the above question, which of the statement is surplus ?
(A) Only (2) (B) Only (3)
(C) (1) or (2) (D) (2) or (3)
(E) None of these

4. If A + B means A is the sister of B; A × B means A is the wife of B, A ÷ B means A is the father of B and A – B means A is the brother of B. Which of the following means T is the daughter of P ?
(A) P × Q ÷ R + S – T (B) P × Q ÷ R – T + S
(C) P × Q ÷ R + T – S (D) P × Q ÷ R + S + T
(E) None of these

5. If P $ Q means P is the brother of Q; P # Q means P is the mother of Q; P * Q means P is the daughter of Q in A # B $ C * D, who is the father ?
(A) D (B) B
(C) C (D) Data is inadequate
(E) None of these

6. If A + B means A is the brother of B; A ÷ B means A is the father of B and A × B means A is the sister of B. Which of the following means M is the uncle of P ?
(A) M ÷ N × P (B) N × P ÷ M
(C) M + S ÷ R ÷ P (D) M + K ÷ T × P
(E) None of these

7. If X + Y means X is the daughter of Y; X – Y means X is the brother of Y; X ÷ Y means X is the father of Y and X × Y means X is the sister of Y. Which of the following means I is the niece of J ?
(A) J – N ÷ C × I (B) I × C – N ÷ J
(C) J + M × C ÷ I (D) I × C + N – J
(E) None of these

Directions—(Q. 8 and 9) Each of the following questions is based on the following information :
(1) S × T means S is the brother of T
(2) S – T means S is the mother of T
(3) S ÷ T means S is the father of T

8. Which of the followings means M is the son of Q ?
(A) M × R ÷ Q (B) M ÷ R × Q
(C) M – R ÷ Q (D) Q ÷ M × R
(E) None of these

9. If A + B means A is the brother of B; A – B means A is the sister of B and A × B means A is the father of B. Which of the following means that C is the son of M ?
(A) M – N × C + F (B) F – C + N × M
(C) N + M – F × C (D) M × N – C + F
(E) None of these

Directions—(Q. 10 and 11) Each of these questions is based on the following information :
(1) A Δ B means A is the mother of B.
(2) A □ B means A is the sister of B.
(3) A * B means A is the father of B.
(4) A β B means A is the brother of B.

10. Which of the following means that Q is the grandfather of P ?
(A) P Δ N * M * Q (B) Q * N * M Δ P
(C) Q β M β N * P (D) Q * M □ N Δ P
(E) None of these

11. Which of the following means that N is the maternal uncle of M ?
(A) N β P □ L Δ E □ M
(B) N □ Y Δ A β M
(C) M □ Y * P □ N
(D) N β C Δ F * M
(E) None of these

Directions—(Q. 12 and 13) Each of these question is based on the following information :
(1) P + Q means P is the sister of Q.
(2) P – Q means P is the mother of Q.
(3) P × Q means P is the brother of Q.
(4) P ÷ Q means P is the father of Q.

12. Which of the following means that M is the maternal uncle of R ?
(A) M × T – R (B) M ÷ T – R
(C) M + T ÷ K – R (D) M ÷ N + J – R
(E) None of these

13. To answer the above question which of the statements is surplus ?
(A) Only (2) (B) Only (3)
(C) Only (1) (D) Only (3) and (1)
(E) None of these

14. M is the father of N who is the son of V.
In order to know the relation of M to P, which of the statement/statements is/fare necessary ?
I. P is the brother of V.
II. The daughter of N is the grand daughter of V.
(A) Only I (B) Only II
(C) Either I or II (D) I and II both
(E) None of these

15. If A $ B means A is the brother of B; B * C means B is the son of C; C @ D means C is the wife of D and A ≠ D means A is the son of D, how C is related to A ?
(A) Maternal grandmother
(B) Maternal aunt
(C) Aunt
(D) Wife
(E) Mother

16. If D is the brother of B, how B is related C ? To answer this question which of the statements is/are necessary ?
I. The son of D is the grandson of C.
II. B is the sister of D.
(A) Only I (B) Only II
(C) Either I or II (D) I and II both
(E) I and II both are insufficient

17. I. A3P means A is the mother of P
II. A4P means A is the brother of P
III. A9P means A is the husband of P
IV. A5P means A is the daughter of P
Which of the following means that k is the mother-in-law of M ?
(A) M9N3K4J (B) M9N5K3J
(C) K5J9M3N (D) K3J9N4M
(E) None of these

18. (1) B5D means B is the father of D.
(2) B9D means B is the sister of D.
(3) B4D means B is the brother of D.
(4) B3D means B is the wife of D.
Which of the following means F is the mother of K ?
(A) F3M5K (B) F5M3K
(C) F9M4N3K (D) F3M5N3K
(E) None of these

19. To answer the above question which of the statements are not necessary ?
(A) Only (1) (B) Only (2)
(C) Only (2) and (3) (D) Any one of these
(E) None of these

Directions—(Q. 20–22) Use the following information to answer these questions—
'A + B' means 'A is father of B.'
'A × B' means 'A is daughterof B.'
'A ÷ B' means 'A is brother of B.'
'A – B' means 'A is wife of B.'

20. In 'L – M + K ÷ F', how is 'F' related to 'L' ?
(A) Son (B) Daughter
(C) Nephew (D) Cannot be determined
(E) None of these

21. Which of the following expressions means 'J' is son of 'D' ?
(A) D + L × H ÷ J (B) J ÷ P × D
(C) J ÷ P – D (D) T – D + J
(E) None of these

22. In 'H + K × R', how is 'R' related to 'H' ?
(A) Husband (B) Brother
(C) Wife (D) Mother
(E) None of these

Directions—(Q. 23–27) Study the following information carefully and answer the questions given below—
(i) 'P × Q' means 'P is brother of Q'.
(ii) 'P – Q' means 'P is mother of Q'.
(iii) 'P + Q' means 'P is sister of Q'.
(iv) 'P ÷ Q' means 'P is father of Q'.

23. How is W related to M in the expression :
W + T ÷ R × M ?
(A) Maternal aunt (B) Paternal aunt
(C) Grandmother (D) Data inadequate
(E) None of these

24. How is K related to D in the expression :
D – J + M ÷ K ?
(A) Grandson (B) Nephew
(C) Niece (D) Data inadequate
(E) None of these

25. How is R related to M in the expression :
M + J ÷ T × R ?
(A) Nephew (B) Niece
(C) Nephew or Niece (D) Data inadequate
(E) None of these

26. Which of the following expression represents T is nephew of J ?
(A) J × M – F × T (B) J × M – F + T
(C) J × M ÷ F × T (D) J × M ÷ F + T
(E) None of these

27. Which of the following expression represents B is the paternal uncle of H ?
(A) B × M ÷ H (B) B + M ÷ H
(C) B × M + H (D) B + M – H
(E) None of these

Directions—(Q. 28–29) Study the following information carefully and answer the questions given below—

(i) 'A × B' means 'A is mother of B'.
(ii) 'A – B' means 'A is father of B'.
(iii) 'A ÷ B' means 'A is brother of B'.
(iv) 'A + B' means 'A is sister of B'.

28. Which of the following means 'D is daughter of M' ?
(A) D + J – M (B) D × R – M
(C) M – D (D) M – D + K
(E) None of these

29. Which of the following means 'T is maternal grandfather of R' ?
(A) T – D × R (B) T – D – R
(C) T ÷ D × R (D) T × D × R
(E) None of these

Directions—(Q. 30-32) :

(i) 'P × Q' means 'P is brother of Q'.
(ii) 'P – Q' means 'P is sister of Q'.
(iii) 'P + Q' means'P is father of Q'.
(iv) 'P ÷ Q' means 'P is mother of Q'

30. Which of the following represents 'M is nephew of N' ?
(A) N – K + M (B) N × K ÷ M
(C) N ÷ K × M (D) N – K + M × T
(E) None of these

31. How is T related to D in the expression :
H + T ÷ R – D ?
(A) Nephew (B) Niece
(C) Nephew or Niece (D) Data inadequate
(E) None of these

32. Which of the following represents F is daughter of W ?
(A) W ÷ R + F (B) W × R × F
(C) W + R × F – T (D) W + R – F + T
(E) None of these

Directions—(Q. 33–37) Study the following statements and answer the questions given below—

(i) 'A × B' means 'A is brother of B'.
(ii) 'A – B' means 'A is mother of B'.
(iii) 'A + B' means 'A is father of B'.
(iv) 'A ÷ B' means 'A is sister of B'.

33. 'M is maternal uncle of J' will be written as which of the following ?
(A) J × R – M (B) M × J – T
(C) M × T + J (D) M × T – J
(E) None of these

34. 'P is niece of J' will be written as which of the following ?
(A) J ÷ R – P ÷ T (B) J ÷ R – P
(C) J × R – P (D) P ÷ J + K
(E) None of these

35. Which of the following represents 'K is nephew of R' ?
(A) R × M + K (B) R × M + K × J
(C) K × M – R (D) Cannot be determined
(E) None of these

36. Which of the following relationship between T and R is reperesented by 'T + J – R' ?
(A) T is grandmother of R
(B) R is grandson of T
(C) T is grandfather of R
(D) R is granddaughter of T
(E) None of these

37. Which of the following statements is **superfluous** to answer the above questions ?
(A) Only (i)
(B) Either (i) or (iii)
(C) Either (ii) or (iv)
(D) All the four statements are required
(E) The question cannot be answered even with all the four statements

Answers with Explanations

Exercise 1

1. (B) ∵ E is the brother of B
∴ A is the father of E
but D is the wife of E.
Hence, D is daughter-in-law of A.

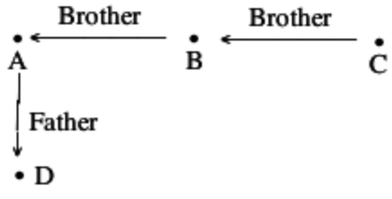
2. (E) Anupam's son-in-law is the brother of the lady who was sitting in the car. Hence, the husband is also the son-in-law of Anupam.

3. (A) Brother of mother means maternal uncle. Hence, the only nephew of Naman's maternal uncle means Naman himself. Therefore Suchendra is the wife of Naman.

4. (B) 'The only daughter of the father of X's mother' means mother of X. Hence, X is the son of the lady in the photograph.

5. (B) Only the child of my father means 'Abhisek' himself. This means the girl is the daughter of Abhisek. Hence, Abhisek's wife is the mother of the girl.

6. (E) Ashok is the only brother of Sudeep and Veena is the sister-in-law of Ashok. Hence Veena is the wife of Sudeep. Kalyani is the mother-in-law of Veena. Kalyani is the mother of Ashok.

7. 

C may be female or male.
Hence, C is the brother of A is not definitely true.

8. (C) Father of Deepak's daughter's father → Deepak's father.
Hence, the person is the brother of Deepak's father.
Therefore, the person is the uncle of Deepak.

9. (D) As the sex of D is not known, hence, the relation between D and A cannot be determined.

10. (C) Nalni is the daughter of the only son of Gopi's grandfather.

    Hence, it is clear that Nalni is the sister of Gopi.

11. (A) M is the father of N and N is the son of V.

    Hence, V is the mother of N.

    From I. P is the brother of V

    ∴ M is the brother-in-law of P because V is the wife of M.

    From II. The daughter of N, is the granddaughter of V. From this we do not get any relation of M to P.

12. (E) The man in the photo is the son of the sister of Bajpai. Hence, Bajpai is the maternal uncle of the man in the photograph.

13. (D) The woman is the mother of Sashank's granddaughter.

    Hence, the woman is the daughter-in-law of Sashank.

14. (B) P is the mother of K

    K is the sister of D

    D is the father of J.

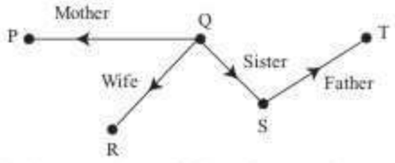
    ∴ J is the nephew or niece of K and P is the grandmother of J.

15. (A) The man in the photograph is the son of the only son of Lata's grandfather *i.e.*, the man is the son of Lata's father. Hence, the man is the brother of Lata.

16. (E) D is the brother of B. But the sex of B is not known.

    Hence, the relation of B with C cannot be determined with the help of I or II or both.

17. (E)



    ∴ P is the mother of S and P and T are wife and husband respectively.

    Hence, none of these is not correct.

18. (B) The boy in the photograph is the only son of Reena's grandfather's only son; *i.e.*, the boy is only son of Reena's father. Hence, the boy is the brother of Reena or Reena is sister of the boy.

19. (B) The girl is the daughter of the sister of Sandeep's father. Hence, the girl is the cousin or Sandeep is the cousin of the girl.

20. (A) The man in the photograph is son of Anjali's grandfather's son *i.e.*, the son of Anjali's father. Hence, the boy is the brother of Anjali.

21. (B) A and B are children of D.

    From I. C is the brother B and son of E.

    Since, the sex of D and E are not known. Hence, I is not sufficient to answer the question.

    From II. F is the mother of B. Hence, F is also the mother of A. Hence, D is the father of A. Thus, II is sufficient to answer the question.

22. (D) The boy in the photograph is the only son of the son of Raman's mother *i.e.*, the son of Raman. Hence, Raman is the father of the boy.

23. (D) The girl is wife of the grandson of Amit's mother *i.e.*, the girl is the wife of the son of Amit. Hence, Amit is the father-in-law of the girl.

24. (C) Brother of person's wife → brother-in-law of the person. Hence, the son of lady's brother is brother-in-law of the person. Therefore the brother of the lady is the father-in-law of the person. Hence, the lady is the sister of the person's father-in-law.

25. (C) The man is the only son of the mother of the mother of the woman. Hence, the man is the maternal uncle of the woman. So, the woman is the niece of the man.

26. (B) Father's wife → mother. Hence, the daughter of the mother means sister and sister's younger brother means brother. Therefore, the boy is the brother of Deepak.

27. (A) The father of the boy's uncle → the grandfather of the boy and daughter of the grandfather → sister of father.

    Hence, the son of the sister of father → brother.

    Thus, the boy is the brother of the girl.

28. (B) C and Q are sisters and A is the son of C. Hence, C is the mother of A or Z is the mother Q. Hence, Z is the maternal grandmother of A. P is the son of Z. Hence, P is the maternal uncle of A.

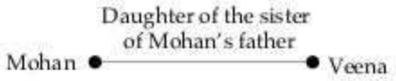
29. (D) Daughter of Abhijit's brother → niece of Abhijit. Thus the granddaughter of the woman is Abhijit's niece.

    Hence, the woman is the mother of Abhijit.

30. (B)

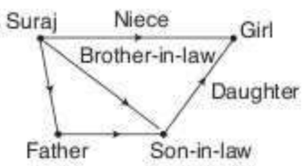
    ∴ The boy is the son of Meena.

31. (B)



    ∴ Veena is the cousin of Mohan.

32. (A)



    The girl is the neice of Suraj.

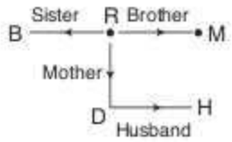
33. (D) The only grandson of Seema's mother's father in law Seema's brother.

    ∴ The man in the photograph is the brother of Seema.

34. (B) Only daughter of the grandfather is the sister of father of Suresh and daughter of the father's sister is cousin of Suresh.

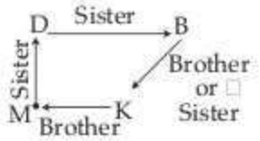
35. (D) As the sex of P is not known. Hence, the answer of the question cannot be determined.

36. (B)



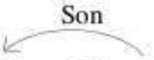
H has three children.

37. (C)



Exercise 2

1. (C) P – M → P is the brother of M
   M + N → M is the mother of N
   N × Q → N is the sister of Q
   ∴ P is the maternal uncle of Q.
2. (A) M × N → M is the mother of N
   N ÷ S → N is the wife of S
   and S + T → S is the father of T.
   Hence, M is the maternal grandmother of T.
3. (A) Only (2) is surplus.
4. (B) P × Q → P is the wife of Q
   Q ÷ R → Q is the father of R
   R – T → R is the brother of T
   T + S → T is the sister of S.
   ∴ T is the daughter of P.
5. (A) A is the mother of B, B is the brother of C and C is the daughter of D. Hence, D is the father.
6. (D) M + K → M is the brother of K
   K ÷ T → K is the father of T
   T × P → T is the sister of P
   ∴ K is the father of P and M is the uncle of P.
7. (D) I × C → I is the sister of C
   C + N → C is the daughter of N
   and N – J → N is the brother of I.
   Hence, I is niece of J.
8. (D) Q ÷ M → Q is the father of M
   M × R → M is the brother of R.
   Hence, Q ÷ M × R → R is the son of Q.
9. (D) M × N → M is the father of N
   N – C → N is the sister of C
   and C + F → C is the brother of F.
   Hence, M is the father of C or C is the son of M.
10. (E)
11. (A) N β P → N is the brother of P
    P □ L → P is the sister of L
    L Δ E → L is the mother of E
    E □ M → E is the sister of M.
    Hence, L is the mother of M, P is the maternal aunt of M and N is the maternal uncle of M.
12. (A) M × T → M is the brother of T.
    and T – R → T is the mother of R.
    Hence, M is the maternal uncle of R.
13. (E) Here (1) and (4) are not used. Hence, (1) and (4) are surplus.
14. (A) M is the father of N and N is the son of V.
    Hence, V is the mother of N.
    From I. P is the brother of V
    ∴ M is the brother-in-law of P because V is the wife of M.
    From II. The daughter of N, is the grand- daughter of V. From this we do not get any relation of M to P.
15. (E) A $ B → A is the brother of B
    B * C → B is the son of C
    → A is the son of C
    C @ D → C is the wife of D
    → C is the mother of A.
16. (E) D is the brother of B. But the sex of B is not known.
    Hence, the relation of B with C cannot be determined with the help of I or II or both.
17. (B) M9N → M is the husband of N
    N5K → N is the daughter of K
    → M is the son-in-law of K
    K3J → K is the mother of J
    → K is a lady
    → K is the mother-in-law of M.
18. (A) F3M → F is the wife of M
    M5K → M is the father of K
    ∴ F is the mother of K.
19. (C) Only (2) and (3) are not necessary.
20. (D) L – M + K ÷ F → L ← M ← K ← F
    Wife Father Brother
    ∴ F is the son of L.



21. (B) J ÷ P × D → J ← P ← D
    Brother Daughter
    ∴ J is the son of D.
22. (C) H + K × R → H ← K ← R
    Father Daughter
    ∴ R is the wife of H.
23. (B) W + T → W is the sister of T
    T ÷ R → T is the father of R
    R × M → R is the brother of M
    ∴ W is the paternal aunt of M.
24. (D) D – J → D is the mother of J
    J + M → J is the sister of M
    M ÷ K → M is the father of K
    ∴ K is the grandson or granddaughter of D
25. (C) M + J → M is the sister of J
    J ÷ T → J is the father of T
    T × R → T is the brother of R
    ∴ R is the niece or nephew of M.

Continued On Page 196

Alphabet

In this chapter questions based on **Alphabet** are asked. In the recent years after some changes digits and figure are also combined with it. In spite of these changes, there is no change in the principal rules. In order to understand about this chapter, the following rules should be kept in mind :

(1) We know that there are 26 letters in the English alphabet but to solve the questions related to it, we should have knowledge of the number position of letters in the alphabet.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
14	15	16	17	18	19	20	21	22	23	24	25	26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Remember the word **FLRX**. Its number position in the alphabet is 6, 12, 18 and 24, which is at an interval of 6.

If the position of the letter O is asked you know that the letter O is between L (12) and R (18). You may easily find the position of O either by adding 3 in the position of 'L' or by subtracting 3 from the position of 'R'. 3 is added in the position of L because O is third letter after L or 3 is subtracted from the position of R because O is third letter, before R.

F (6) L (12) R (18) X (24)

(2) A B C D ..... X Y Z

↓

(L.H.S.)

Left hand side

The left hand side of the English alphabet is supposed from the English alphabet begins *i.e.*, from 'A' or the letter which begins at your left hand.

(3) A B C D ..... X Y Z

(R.H.S.)

Right hand side

The right hand of English alphabet begins at your right hand or from the last letter of the alphabet *i.e.* 'Z'.

(4) In order to know the position of a letter in the same direction *i.e.* from the left to the left or from the right to the right we subtract the number position of one from another.

Example—What will be the sixth letter to left of the 12th letter from the left in the alphabet ?

Solution : According to the general rule of same direction we have to subtract position number of one from another.

$\therefore \quad 12 - 6 = 6$

$\therefore$ We now locate the letter which comes at 6th position from left.

According to the 'FLRX' rule the letter 'F' comes at 6th position. Hence the required answer is 'F'.

(5) In order to know the position of a letter in opposite directions *i.e.* from left to right or from right to left direction we **add** the numbers of their positions.

Example—What will be the 6th letter to the right of the 5th letter from the left ?

Solution : According to the general rule of opposite directions, we have to add the numbers of their positions.

$\therefore \quad 5 + 6 = 11$

$\therefore$ We should locate the letter which comes at 11th place from the left end, because in the question the given letter from the left.

According the 'FLRX' rule the letter at 11th place will be one letter previous to L (12) *i.e.*, K.

(6) If the position number of a letter to be found from the right end *i.e.* from 'Z', then position of the 7th letter from the left end is subtracted from 27.

Example—What will be the 7th letter to the right of the 16th letter from the left ?

Solution : According the general rule of opposite directions,

$16 + 7 = 23$

Now according to the rule (6)

The position number of the required letter from the right end is $27 - 23$, *i.e.*, 4th.

Hence the required letter is 'W'.

(7) To write the alphabet in reverse order :

Original Order : A B C D E F G H I J K L M N O P Q R S T U V W X Y Z.

Reverse Order : Z Y X W V U T S R Q P O N M L K J I H G F E D C B A.

Thus we see the left hand side of original order becomes right hand side of the reverse order and vice versa.

(8) **To write the first half of the alphabet in reverse order :** As there 26 letters in all in the alphabet. Hence each of the two parts will contain 13 letters.

I. **First half is from A to M.**

Original Order—A B C D E F G H I J K L M

Reverse Order—M L K J I H G F E D C B A.

Second half of the alphabet is from N to Z.

Original Order—N O P Q R S T U V W X Y Z.

Reverse Order—Z Y X W V U T S R Q P O N.

Note—If it is asked to write the first half of the alphabet or the second half of the alphabet in reverse order, then only those letters are written in reverse order which are asked and the remaining letters will be in original order. For example if first half of the alphabet is asked to write in reverse order then only from A to M

will be written in reverse order and the remaining letters *i.e.* from N to Z will be left in their original order.

From type 1 to 10 are based on the English alphabet :

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z.

Example 1. Which letter is 8th to the left of the 13th letter from the left of the English alphabet ?

(A) F (B) H
(C) G (D) E
(E) None of these

Solution (D) : 13 – 8 = 5 (From left to left)

5th letter from the left is E.

As E is given at option D. Hence (D) is the correct answer.

Example 2. Which letter is 10th to the right of the 15th letter to the right of the English alphabet ?

(A) S (B) T
(C) V (D) U
(E) None of these

Solution (C) : 15 – 10 = 5 (From right to right)

Now 5th from the right is required.

∴ 27 – 5 = 22 (Rule 6)

Hence 22nd letter from the left is V. Which is in (C)

Example 3. Which letter will be 8th to the right of the 9th letter from the left end of the English alphabet ?

(A) R (B) Q
(C) P (D) S
(E) None of these

Solution (B) : 9 + 8 = 17 (From left to right)

Now 17th letter from left is 'Q' which is in (B).

Example 4. Which letter will be 9th to the left of the 7th letter from the right ?

(A) L (B) K
(C) N (D) H
(E) None of these

Solution (B) : 9 + 7 = 16 (From right to left)

Then 27 – 16 = 11 (Rule 6)

Hence 11th letter from the left is K which is in (B).

Example 5. If all the letters of the English alphabet are written in reverse order, then which letter will be 6th to the left of the third letter from the right ?

(A) H (B) N
(C) S (D) I
(E) None of these

Solution (D) : Letters in reverse order :

Z Y X W V U T S R Q P O N M L K J I H G F E D C B A.

Then 3 + 6 = 9 (Right to left)

Now 9th from the right (9th from the left in original) is I which is given in (D).

Example 6. If first half of the English alphabet is written in reverse order, then which letter will be 9th to the left of the 18th letter from the left ?

(A) H (B) E
(C) G (D) L
(E) None of these

Solution (B) : On writing the first half of the English alphabet in reverse order :

M L K J I H G F E D C B A N O P Q R S T U V W X Y Z.

Now 18 – 9 = 9 (Left to left)

9th letter from the left is E.

Example 7. If second half of the English alphabet is written in reverse order, then which will be the 8th letter to the right of the 7th letter from the left ?

(A) Y (B) X
(C) W (D) V
(E) None of these

Solution (A) : On writing the second half of the English alphabet in reverse order :

A B C D E F G H I J K L M Z Y X W V U T S R Q P O N

Now 7 + 8 = 15 (Left to right)

Now 15th letter from the left is Y.

Example 8. In the English alphabet which letter is exactly midway between the 5th letter from the left and 8th letter from the right ?

(A) K (B) L
(C) M (D) J
(E) None of these

Solution (B) :

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z.

Fifth letter from the left is E and 8th letter from the right is S.

Now L is just midway between E and S.

Example 9. If every alternate letter starting from B is deleted from the English alphabet then which will be 4th letter to the right of the 3rd letter from the left ?

(A) N (B) L
(C) M (D) H
(E) None of these

Solution (C) : The new alphabet series after deleting every alternate letter starting from B is—

A C E G I K M O Q S U W Y

Now 3 + 4 = 7 (Left to right)

The 7th letter from the left is M.

Example 10. If every alternate letter starting from A is replaced by 1, 3, 5, …, digit, then which letter will be replaced by 17 ?

(A) R (B) H
(C) Q (D) S
(E) None of these

Solution (C) : The new series is :

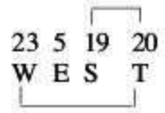
1 B 3 D 5 F 7 H 9 J 11 L 13 N 15 P 17 R 19 T 21 V 23 X 25 Z.

It is clear from the new series that 'Q' is replaced by 17.

Example 11. How many pairs of letters are there in the word 'WEST' which have as much distance between them in word as in the alphabet ?

(A) 1 (B) 3
(C) 2 (D) 4
(E) None

Solution (C) :

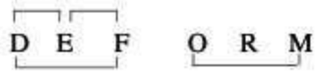


There are two required pairs W – T (23 – 19) and S – T (19 – 20).

Example 12. How many pairs of letters are there in the word 'DEFORM' which have as many letters between them in the word as in the alphabet ?

(A) 1 (B) 2
(C) 3 (D) 4
(E) None

Solution (D) :



DE, EF, DF, MO

We will not consider D E are E F because these are continuous letters *i.e.* there is no letter between them. Hence we shall not consider such pairs.

Example 13. At the most how many meaningful words can be made with the first, third, sixth and seventh letters of the word 'PANARAS' when all the four letters are used and in each word no letter is repeated. If only one word can be made then your answer is M. If more than one word can be made then your answer is X and if no word can be made then your answer will be Y.

(A) M (B) X
(C) Y (D) None of these

Solution (A) : The first, third, sixth and seventh letters of the word P A N A R A S are P, N, A and S respectively.

The meaningful word formed with these letters P, N, A and S is only 'SNAP'. Hence only one word is possible.

Note : Here all the four letters are to be used.

Example 14. At the most how many meaningful words can be made with the first, second, third and the last letters of the word 'MAXICO' ? Any number of letters out of these four can be used to make a word but no letter is to be repeated in each word ?

(A) 1 (B) 2
(C) 3 (D) 4
(E) None

Solution (B) : The first, second, third and the last letters of the word 'MAXICO' are M, A, X and O. With these letters two meaningful words AM and OX are possible.

Example 15. Arrange the given words in the sequence in which they occur in the dictionary and find the word which will appear in third place :

(A) Rigour (B) Remove
(C) Retrospect (D) Revive
(E) Rumour

Solution (D) : The correct order is : Remove, Retrospect, Revive, Rigour and Rumour

At the third place, the word is : Revive .

Example 16. In the following arrangement how many such digits are there, each of which is immediately preceded by a letter and immediately followed by a symbol ?

Arrangement : A 7 * L P 2 N S 3 □ H K 2 P D 8 Δ

(A) 4 (B) 3
(C) 2 (D) 1
(E) None of these

Solution (B) : First of all write the required order.

Letter digit Symbol

A 7 * L P 2 N S 3 □ H M K 2 P D 8 Δ

Hence required digits are 3.

Example 17. If the first and sixth letters in the word 'COMPROMISE' were interchanged, also the second and seventh letters are interchanged and so on, which letter will be seventh letter from the right ?

(A) I (B) S
(C) E (D) R
(E) None of these

Solution (B) :

	1 2 3 4 5 6 7 8 9 10
Original Order :	C O M P R O M I S E
Order after change :	O M I S E C O M P R

Now the seventh letter in the changed order from the right is S.

Exercise 1

1. How many pairs of letters are there in the word **EXPLOSION** which have as many letters between them in the word as there are between them in the English alphabet ?
   (A) One (B) Two
   (C) Three (D) Four
   (E) None of these
2. How many pairs of letters are there in the word **ATMOSPHERE** which have as many letters between them in the word as there are between in the English alphabet ?
   (A) Two (B) Three
   (C) Four (D) Five
   (E) None of these

3. If all the letters of the word **UNIVERSAL** are arranged in alphabetic order then number of the positions of each letter is given according to new arrangement then what is difference between number positions of vowels and those of consonants ?
(A) 19 (B) 17
(C) 21 (D) 20
(E) None of these

4. How many pairs of letters are there in the word **KINDNESS** which have as many letters between them in the word as there are between in the alphabet ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

5. If with the first, second, fifth and sixth letters of the word **EXCLAIM** a meaningful word is formed then third letter of the word is the answer. If no word is possible then Y will be your answer and if more than one such word can be made then give N as answer.
(A) Y (B) N
(C) C (D) M
(E) I

6. How many pairs of letters are there in the word **'BUCKET'** which have as many letters between them in the word as in the English alphabet ?
(A) One (B) Two
(C) Three (D) Four
(E) More than four

7. How many pairs of letters are there in the word **CREATIVE** which have as many letters between them in the word as in the English alphabet ?
(A) One (B) Two
(C) Three (D) Four
(E) None of these

8. How many pairs of letters are there in the word **PRISON** which have as many letters between them in the word as in the English alphabet ?
(A) Nil (B) One
(C) Two (D) Three
(E) More than three

9. How many pairs of letters are there in the word **CLANGOUR** which have as many letters between them in the word as in the English alphabet ?
(A) One (B) Two
(C) Three (D) Four
(E) None of these

10. How many pairs of letters are there in the word **DABBLE** which have as many letters between them in the word as in the English alphabet ?
(A) One (B) Two
(C) Nil (D) Three
(E) More than three

11. How many pairs of letters are there in the word **SEQUENTIAL** which have as many letters between them in the word as in the English alphabet ?
(A) Nil (B) One
(C) Two (D) Three
(E) Four

12. How many pairs of letters are there in the word **ASTOUNDER** which have as many letters between them in the word as in the English alphabet ?
(A) Nil (B) One
(C) Two (D) Three
(E) Four

13. How many pairs of letters are there in the word **'NURSING'** which have as many letters between them in the word as in the English alphabet ?
(A) Two (B) Three
(C) Four (D) Five
(E) None of these

14. If with the first, fifth, sixteenth, nineteenth and 20th letters of the English alphabet using each letter only one time, a meaningful word is formed then the middle letter is your answer. If more than one such word can be formed then M is your answer and if no such word can be formed then give X as your answer.
(A) S (B) E
(C) T (D) M
(E) X

15. In which of the following pairs of letters, the relation between two letters on the basis of the English alphabet is same as between the letters HE in the word **'BROTHER'** on the basis of the English alphabet ?
(A) BR (B) OT
(C) ER (D) RO
(E) TH

16. How many pairs of letters are there in the word **'VISIONARY'** which have as many letters between them in the word as in the English alphabet ?
(A) One (B) Two
(C) Three (D) More than three
(E) None of these

17. How many such letters are there in the word **BREAK** each of which is as far away from the beginning in the word as when they are arranged alphabetically within them ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

18. How many such pairs of letters are there in the word **STREAM**, each of which has as many letters between them in the word as in the English alphabet ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

19. How many such pairs of letters are there in the word **'CONFIRM'** each of which has as many letters between them in the word as in the English alphabet ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

20. How many such pairs of letters are there in the word **EXAMINATION** each of which has as many letters between them in the word, as they have in the English alphabet ?
(A) None (B) One
(C) Two (D) Three
(E) None of these

21. How many meaningful English words can be made with the letters **ELMA** using each letter only once in each word ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

22. How many such pairs of letters are there in the word **PRODUCE** each of which has as many letters between them in the word as in the English alphabet ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

23. How many meaningful words can be made from the letters **'DEIV'** using each letter only once ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

24. How many such pairs of letters are there in the word **BRIGHTEN** each of which has as many letters between them in the word as in the English alphabet ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

25. How many meaningful English words can be made with the letters **ERDU** using each letter only once in each word ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

26. How many such pairs of letters are there in the word **GLIMPSE** each of which has as many letters between them in the word as in the English alphabet ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

27. How many such pairs of letters are there in the word **CREDIBLE** each of which has as many letters between them in the word as in the English alphabet ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

28. How many such pairs of letters are there in the word **JOURNEY** each of which have as many letters between them in the word as in the English alphabet ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

29. How many meaningful English words can be made with the letters **'OEHM'** using each letter only once in each word ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

30. How many meaningful English words can be made with the letters **ILME** using each letter only once in each word ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

31. How many such pairs of letters are there in the word **SHOULDER** each of which has as many letters between them in the word as in the English alphabet ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

32. How many pairs of letters are there in the word **BRIGADE** which have as many letters between them in the word as in the English alphabet ?
(A) Nil (B) One
(C) Two (D) Three
(E) More than three

33. How many pairs of letters are there in the word **CREDENTAL** which have as many letters between them in the word as in the English alphabet ?
(A) Nil (B) One
(C) Two (D) Three
(E) More than three

34. How many pairs of letters are there in the word **PURPOSEFUL** which have as many letters between them in the word as in the English alphabet ?
(A) One (B) Two
(C) Three (D) Four
(E) More than four

35. How many pairs of letters are there in the word **ADVERTISEMENT** which have as many letters between them in the word as in the English alphabet ?
(A) 3 (B) 4
(C) 5 (D) More than 5
(E) None of these

Exercise 2

1. If with the second, fourth, fifth, eleventh and thirteenth letters of the word **ESTABLISHMENT** using each letter only one time a meaningful word is formed then second letter of the word formed is your answer. If more than one such word can be formed then M is your answer and if no such word can be formed then give X as your answer.
(A) B (B) A
(C) E (D) M
(E) X

2. If the positions of the first and sixth letters of the word **DISTRIBUTE** are interchanged, similarly the positions of the second and seventh are interchanged and so on, which letter will be fifth from the left after rearrangement ?
   (A) E (B) I
   (C) S (D) T
   (E) None of these

3. If it is possible to make a meaningful word with the second, the third, the seventh and the tenth letters of the word **CREDIBILITY** which will be the second letter of the word so formed ? If more than one word can be formed then give M as the answer. If no meaningful word can be formed then give X as the answer.
   (A) M (B) E
   (C) I (D) T
   (E) X

4. If it is possible to make a meaningful word with the first, the third, the ninth and the twelfth letters of the word **PREDOMINANTLY** then which will be the second letter of the word so formed. If no such word can be made, give K as the answer. If more than such one word can be made, give B as the answer.
   (A) B (B) P
   (C) E (D) K
   (E) A

5. If with all the four letters of the word TAIL another meaningful word is made when each of the letters is used only one time, then the last letter of the word so formed will be your answer. If more than one such words are made then your answer is X and if no such word is made then your answer is E.
   (A) A (B) I
   (C) L (D) X
   (E) E

6. If a meaningful word can be formed with the first, the fourth, the fifth and the seventh letters of the word **MYSTERIOUS,** using each letter only one time then the second letter of the word so formed is the answer. If more than one such words can be formed then your answer is M and if no such word can be formed then your answer is X.
   (A) I (B) E
   (C) T (D) M
   (E) X

7. If a meaningful word can be formed with the third, the sixth, the eighth and the eleventh letters of the word **DISTINGUISH** using each letter only one time then the first letter of the word so formed is the answer. If more than one such words can be formed then your answer is M and if no such word can be formed then your answer is X.
   (A) N (B) S
   (C) H (D) M
   (E) X

8. How many meaningful words can be formed with the second, the fourth, the seventh and the eighth letters of the word **ENDANGER**, using each letter only one time ?
   (A) 1 (B) 3
   (C) 2 (D) 4
   (E) None of these

9. If it is possible to make a meaningful word with the first, second, fifth and sixth letters of the word **EXCLAMATORY,** which of the following will be the third letter of that word ? If more than one such words can be made than N as the answer and if no such word can be made then give Y as the answer.
   (A) Y (B) C
   (C) N (D) A
   (E) L

10. How many words can be formed from the word **GODOWN** in which no letter is repeated and the letters in the word are in the same order as they are in the given word ?
   (A) 4 (B) 3
   (C) 5 (D) 2
   (E) None of these

11. How many pairs of letters are there in the word **RECRUITMENT** which have as many letters between them in the word as in the English alphabet ?
   (A) 4 (B) 3
   (C) 2 (D) 1
   (E) None of these

12. How many pairs of letters are there in the word **PREROGATIVE** which have as many letters between them in the word as in the English alphabet ?
   (A) 4 (B) 3
   (C) 2 (D) 1
   (E) None of these

13. If it is possible to make a meaningful word with the first, seventh, ninth and tenth letters of the word **TREMENDOUS**, which of the following will be the third letter of that word ? If more than one such words can be made then M is the answer and if no such word can be made then give N as the answer.
   (A) U (B) M
   (C) N (D) S
   (E) None of these

14. If it is possible to make only one meaningful word with the first, the third, the fifth and the eighth letters of the word **SHAREHOLDING**. Which of the following will be the second letter of that word ? If no such word can be made, give 'X' as the answer and if more than one such word can be made, give 'Y' as the answer.
   (A) L (B) E
   (C) S (D) X
   (E) Y

15. The positions of the first and the sixth letters in the word **CONTEXTUAL** are interchanged. Similarly the positions of the second and the seventh letters are interchanged and so on. Which of the following will be the fourth letter from the right end after the rearrangement ?
(A) O (B) N
(C) T (D) E
(E) None of these

16. The letters in the word **DIRE** are changed in such a way that each consonant is substituted by the next letter in the English alphabet and each vowel is substituted by the previous letter in the English alphabet. How many meaningful words can be formed with the new set of letters using each letter only once in each word ?
(A) One
(B) Two
(C) Three
(D) No such word can be formed
(E) None of these

17. If it is possible to make only one meaningful word with the first, the fourth, the sixth and the tenth letters of the word **DISTRIBUTE**, which of the following will be the first letter of that word ? If no such word can be made, give 'N' as the answer and if more than one such word can be made give 'M' as the answer.
(A) D (B) E
(C) T (D) N
(E) M

18. If it is possible to make a meaningful word from the fourth, the fifth, the sixth, the eighth and the eleventh letters of the word **GOURMANDISE** using each letter only once, first letter of the word is your answer. If more than one such word can be formed, your answer is X. If no such word can be formed your answer is Y—
(A) D (B) R
(C) M (D) X
(E) Y

19. If it is possible to make only one meaningful word from the third, the sixth, the ninth and the tenth letters of the word **PARENTHESIS** using each letter only once, last letter of the word is your answer. If no such word can be formed, your answer is X and if more than one such word can be formed your answer is Y.
(A) R (B) T
(C) S (D) X
(E) Y

20. If it is possible to make only one meaningful word from the second, the sixth, the seventh, the eighth and the tenth letters of the word **PERFORMANCE** using each letter only once, first letter of the word is your answer. If no such word can be formed, your answer is X and if more than one such word can be formed, your answer is Y.
(A) C (B) R
(C) M (D) X
(E) Y

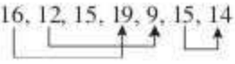
21. If it is possible to make only one meaningful word with the third, the fifth and the seventh letters of the word **CREDIBLE**, which of the following will be the second letter of that word ?
(A) L
(B) I
(C) E
(D) No meaningful word can be made
(E) More than one meaningful word can be made

Answers with Explanations

Exercise 1

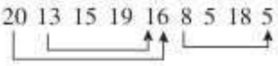
Note—In order to solve such questions, first of all write the number positions of all the letters of the given word. Then it becomes easier to find the difference.

1. (C) EXPLOSION = 5, 24, 16, 12, 15, 19, 9, 15, 14



Hence required pairs are :
P – S, L – I and O – N

2. (B) A T M O S P H E R E
1 20 13 15 19 16 8 5 18 5



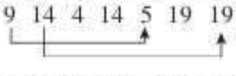
Hence required pairs are T–P, M–P and H–E

3. (B) On writing the letters of UNIVERSAL in alphabetic order

A E I L N R S U V
1 2 3 4 5 6 7 8 9

∴ Required difference
= (L + N + R + S + V) – (A + E + I + U)
= (4 + 5 + 6 + 7 + 9) – (1 + 2 + 3 + 8)
= 31 – 14
= 17

4. (C) K I N D N E S S
11 9 14 4 14 5 19 19



Required pairs are I – E and N – S

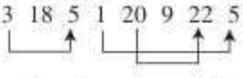
5. (A) E X C L A I M
1 2 3 4 5 6 7

1st, 2nd, 5th and sixth letters of the given word are E, X, A and I
with there letters, no meaningful word can be made.

6. (A) B U C K E T
2 21 3 11 5 20

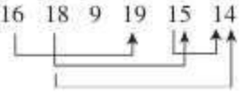
∴ Only one pair is possible

7. (C) C R E A T I V E
3 18 5 1 20 9 22 5



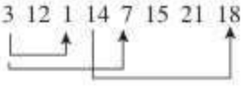
Hence 3 pairs are possible.

8. (E) P R I S O N
16 18 9 19 15 14



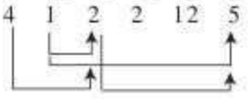
Hence four pairs are possible.

9. (C) C L A N G O U R
3 12 1 14 7 15 21 18



Hence three pairs are possible.

10. (E) D A B B L E
4 1 2 2 12 5



Hence four pairs are possible.

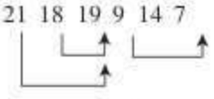
11. (E) S E Q U E N T I A L
19 5 17 21 5 14 20 9 1 12

Hence four pairs are possible.

12. (C) A S T O U N D E R
1 19 20 25 21 14 4 5 18

Hence only two pairs are possible.

13. (B) N U R S I N G
14 21 18 19 9 14 7



Hence only three pairs are possible.

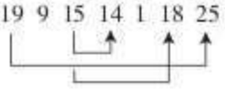
14. (A) First, fifth, sixteenth, nineteenth and 20th letters of the English alphabet are A, E, P, S and T respectively.

With these letters a meaningful word is PASTE whose middle letter is S.

15. (D) H E R O
8 5 18 15

8 – 5 = 3 and 18 – 15 = 3

16. (C) V I S I O N A R Y
22 9 19 9 15 14 1 18 25



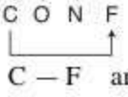
Hence 3 pairs are possible.

17. (B)

B	R	E	A	K
A	B	E	K	R

18. (B) S T R E A M

19. (C)



C — F and N — O

20. (C) EXAMINATION

E–I and N–O.

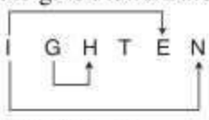
21. (E) Meaningful words are : MEAL, MALE, LAME and LEAM

22. (B) P R O D U C E

R–U

23. (B) From the given letters the word formed is DIVE.

24. (D) B R I G H T E N



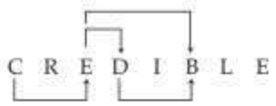
I – N, G – H and I – E

25. (D) DURE, RUDE, RUED

26. (C) G L I M P S E

G–I and E–I.

27. (E)



28. (D)

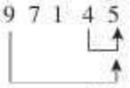
J–N, J–E and U–Y

29. (B) 30. (C)

31. (C)

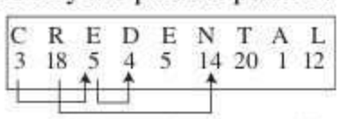
D — E and D — H

32. (C) B R I G A D E
2 18 9 7 1 4 5



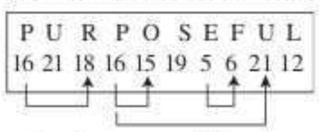
Hence only two pairs are possible.

33. (D) C R E D E N T A L
3 18 5 4 5 14 20 1 12



Hence only three pairs are possible.

34. (D) P U R P O S E F U L
16 21 18 16 15 19 5 6 21 12



Hence 4 pairs are possible.

35. (C) DN, IN, NT, EI, MR.

Exercise 2

1. (D) E S T A B L I S H M E N T
1 2 3 4 5 6 7 8 9 10 11 12 13

Second, fourth, fifth, eleventh and thirteenth letters of the given word are S, A, B, E and T respectively.

Two possible words BE and SAT are formed.

2. (A) D I S T R I B U T E
1 2 3 4 5 6 7 8 9 10
Hence according to the given condition, new arrangement is :
I B U T E D I S T R
∴ 5th letter from the left is 'E'.

3. (A) C R E D I B I L I T Y
1 2 3 4 5 6 7 8 9 10 11
2nd, 3rd, 7th and 10th letters are R, E, I and T.
With these letters the meaningful words are :
TIRE and RITE

4. (A) P R E D O M I N A N T L Y
1 2 3 4 5 6 7 8 9 10 11 12 13
Ist, 3rd, 9th and 12th letter of the word are P, E, A and L respectively.
Meaningful words with these letters are :
LEAP, PALE and PEAL
Hence 3 words can be formed.

5. (E) With all the letters of the word TAIL, no other meaningful word is possible.

6. (D) M Y S T E R I O U S
1 2 3 4 5 6 7 8 9 10
Ist, 4th, 5th and 7th letters of the given word are M, T, E and I. The meaningful words with the letters are MITE and TIME.

7. (B) D I S T I N G U I S H
1 2 3 4 5 6 7 8 9 10 11
3rd, 6th, 8th and 11th letters of the given word are S, N, U and H. The meaningful word is only SHUN. Whose first letters is S.

8. (C) E N D A N G E R
1 2 3 4 5 6 7 8
2nd, 4th, 7th and 8th letters of the given word are N, A, E and R. The meaningful words with these letters are NEAR and EARN.

9. (D) The first, second, fifth and sixth letters of the given word are E, X, A and M respectively. The meaningful word with these letters is **EXAM** and its third letter is A.

10. (D) Words formed are GO, DOWN or GOD, OWN or GO, DO or DO and GOWN.
In each case two words can be formed in which letters are not repeated.

11. (D) R E C R U I T M E N T
18 5 3 18 21 9 20 13 5 14 20
Only one pair is possible.

12. (A) P R E R O G A T I V E
16 18 5 18 15 7 1 20 9 22 5
Hence 4 pairs are possible.

13. (D) First, seventh, ninth and tenth letters of the word are T, D, U and S respectively and the meaningful word with these letters is DUST whose third letter is 'S'.

14. (E) Ist, 3rd, 5th, and 5th letters of the word SHAREHOLDING are S, A, E and L respectively. The meaningful words with these letters are SALE and SEAL.

15. (A) On changing the letters of the word CONTEXTUAL we get XTUALCONTE.
The fourth letter from the right end in rearrangement is 'O'.

16. (A) DIRE → EHSD
The meaningful word formed with these letters is SHED.

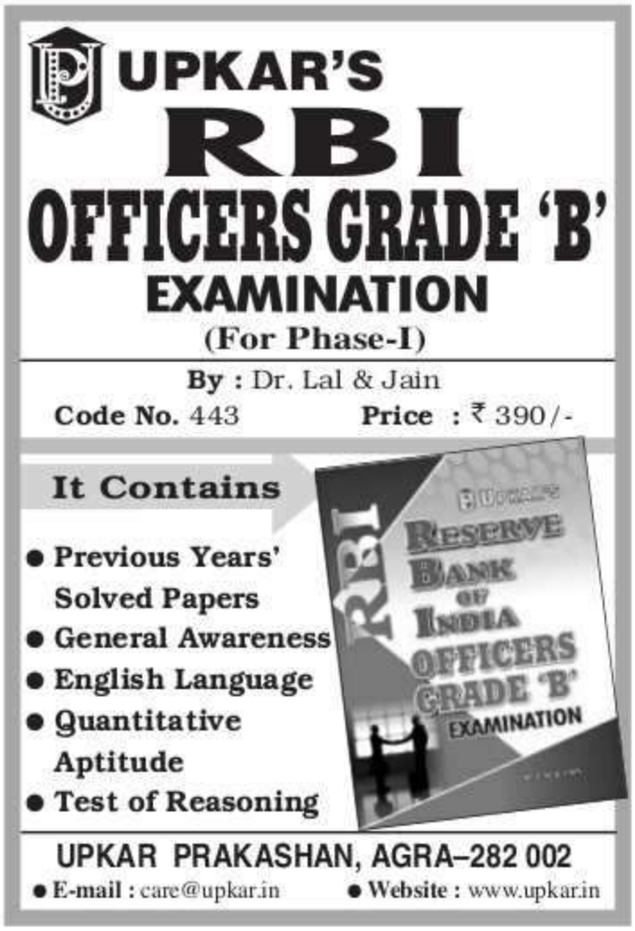
17. (E) First, fourth, sixth and 10th letters of the word DISTRIBUTE are D, T, I and E respectively. The meaningful word with these letters are :
DIET, TIDE and EDIT

18. (D) 4th, 5th, 6th, 8th and 11th letters of the word GOURMANDISE are R, M, A, D and E.
The meaningful words with these letters are DREAM and ARMED.

19. (A) 3rd, 6th, 9th and 10th letters of the word PARENTHESIS and R, T, S and I. With these only one meaningful word is formed that is STIR whose last letter is R.

20. (E) The 2nd, 6th, 7th, 8th and 9th letters of the word PERFORMANCE are E, R, M, A and C. The meaningful words with these letters are MACER and CREAM.

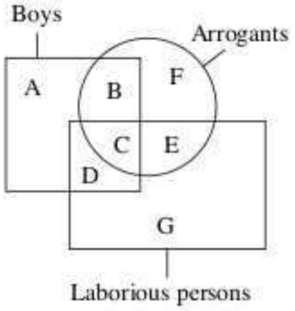
21 (E) The third, the fifth and the seventh letter of the word CREDIBLE are F, I and L respectively.
The meaning of words with these letters are—
LIE and LEI



Venn Diagrams

In such type of test some geomatrical figures are displayed in a Venn diagram. Each geomatrical figure in the diagram represents a certain class concept or group. The candidate is required to study and analyse the figure and then answer certain questions based upon the given data.

Example 1. In the following diagram, various figures represent boys, laborious persons and arrogants.



The square represents the boys, the circle represents arrogants and the rectangle represents the laborious persons. By which alphabet is laborious boys but not arrogants represented ?

(A) B (B) A
(C) D (D) F

Answer with Explanation : (C) Laborious persons are represented by rectangle and the square is for boys, we have to determine laborious boys but not arrogants, for this we have to know that part which comprises rectangle and square but not circle. This portion of the diagram is represented by D part. Hence the answer is 'C'.

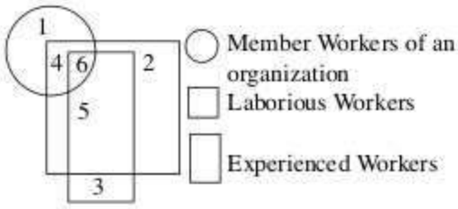
Example 2. From the following given figures, find out a figure which represents language Hindi and English properly.

(A)
(B)
(C)
(D)
(E)

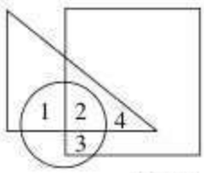
Answer with Explanation : (A) Hindi and English are two separate languages but they are the parts of the language. Hence, a big circle represents for the language and two small circles represent for Hindi and English. Two small circles should be separate to each other and these two small circles should be in a big circle. Such figure is (A) hence the correct answer is (A).

Exercise 1

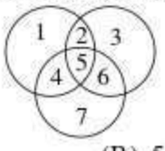
Directions—Read carefully the following diagram for question 1 to 4 and find out the answers for the questions from the given alternatives.



1. By which number are those Laborious workers represented who are neither experienced nor members of organization ?
   (A) 5 (B) 3
   (C) 1 (D) 2
2. What are the total number of workers who are the members of organization ?
   (A) 21 (B) 11
   (C) 4 (D) 5
3. What does no. 3 represent ?
   (A) Experienced workers who are neither laborious nor members of organization
   (B) All the experienced workers
   (C) Experienced and laborious workers
   (D) Experienced workers who are the members of organization
4. Which number represents those laborious and experienced workers who are not the members of organization ?
   (A) 4 (B) 3
   (C) 2 (D) 5
5. If in the following diagram, circle denotes intelligent persons, square experienced persons and triangle teachers, which part of the diagram represents those teachers who are intelligent as well as experienced ?

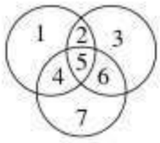


   (A) 1 (B) 3
   (C) 4 (D) 2
6. By the following diagram the membership of the three organizations are shown, which part of the diagram represents for those people who are the members of all the three organizations ?



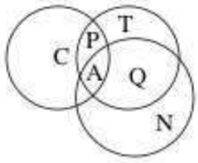
   (A) 2 (B) 5
   (C) 4 (D) 6

7. Following diagram displays those students who read three subjects no. 5 is represented by those students who read.



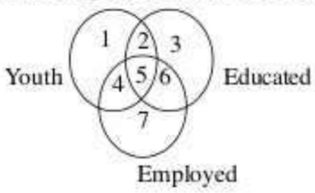
(A) All three subjects
(B) Only one subject
(C) Only two subjects
(D) More than one subject but not all

8. Out of 60 students of class IX, some like cricket very much, some tennis and some football. In the diagram, a particular number represents their likings, which number indicates that some like all the three games ?



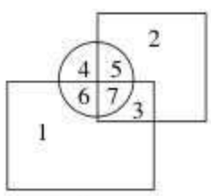
(A) Q (B) A
(C) P (D) C

9. Observe the following diagram carefully and find out the particular portion which represents for those youths who are employed but not educated.



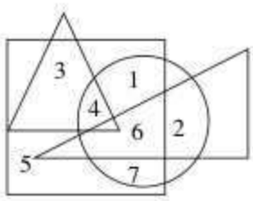
(A) 4, 5, 6 (B) Only 4
(C) 1, 4, 7 (D) 4, 7

10. Find out the doctor who are both the player and artist.



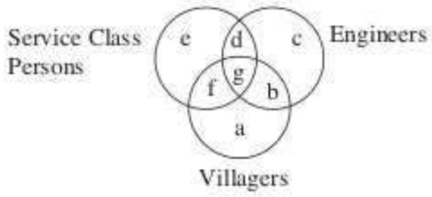
Square = Doctor, Circle = Player, Rectangle = Artist.
(A) 2 (B) 3
(C) 7 (D) 6

11. Find out that digit which is present only in one diagram.



(A) 1 (B) 3
(C) 5 (D) 7

Directions—(Q. 12–16) Read carefully the following diagram and answer the questions based upon that.



12. Which of the following groups is showing the area c ?
(A) Engineers who are not living in villages
(B) Engineers who are neither living in villages nor serving
(C) Villagers who are not serving anywhere
(D) Service class persons who are neither living in villages nor engineers
(E) None of these

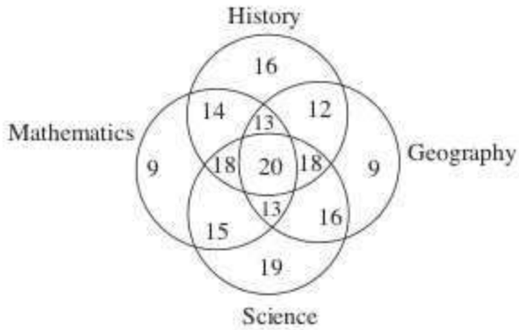
13. Which section represents for alphabet b ?
(A) Villagers who are engineers
(B) Villagers who are not engineers
(C) Engineers who are in service
(D) Service class persons who are not engineers

14. Which group is shown by the area e + d + g + f ?
(A) Service class persons
(B) Engineers
(C) Villagers
(D) None of these

15. Engineers who are living in villages and serving also, by which letter is shown that area ?
(A) a (B) d
(C) g (D) None of these

16. Which group is shown by the area 'd' ?
(A) Engineers who are living in villages
(B) Villagers who are serving
(C) Service class persons who are engineers
(D) Engineers who are serving but not villagers

Directions—(Q.17–20) Each question is based upon following Venn diagram.



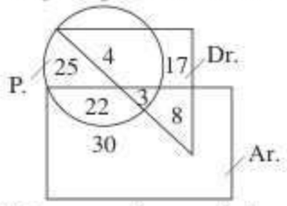
17. The number of total students who have taken either History or Mathematics or Science—
(A) 230 (B) 324
(C) 190 (D) 183

18. Which subject has been taken by most of the students ?
(A) History (B) Geography
(C) Science (D) Mathematics

19. The number of students, who have taken any of the three subjects—
(A) 62 (B) 61
(C) 65 (D) 66

20. The number of students who have taken both History and Geography with other subjects, is following—
(A) 64 (B) 65
(C) 51 (D) 68

Directions—(Q. 21–25) From the diagram mentioned below, answer the five questions which are also given below. Triangle represents Doctors, Circle represents Players and Rectangle represents Artists.



21. Number of doctors who are both the players and artists—
(A) 22 (B) 88
(C) 3 (D) 30

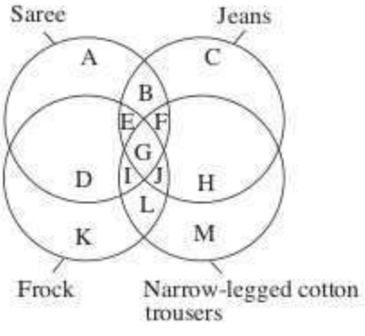
22. How many artists are players ?
(A) 22 (B) 5
(C) 10 (D) 16

23. Number of doctors, who are neither artists nor players—
(A) 5 (B) 17
(C) 10 (D) 30

24. Number of players, who are neither doctors nor artists—
(A) 25 (B) 17
(C) 5 (D) 10

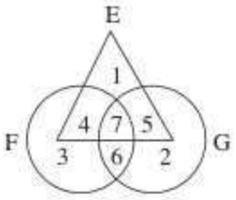
25. Number of artists, who are neither players nor doctors—
(A) 10 (B) 17
(C) 30 (D) 15

26. Circles are shown for those girls who put on various kinds of clothes as indicated by the varieties. Find out those girls who put on frock, jeans and narrow-legged cotton trousers.



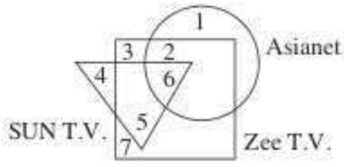
(A) I (B) J
(C) F (D) H

27. Which number represents for those owners who are neither engineers nor good administrators ?



F = Good administrator, E = Engineers, G = Owners
(A) 4 (B) 6
(C) 2 (D) 7

28. A survey was conducted for the choice of T.V. viewers. In which some people said that they saw only Zee T.V. channel, some other people liked only Sun T.V. channel, while some other viewers liked to see Asianet T.V. channel. The least percentage are of those people who liked all the three channels. In the following given diagram, Circle respresents Asianet T.V. channel, Square represents Zee T.V. and Triangle represents Sun T.V. By which number, conclusion can be drawn for the people who see all the three channels?



(A) 2 (B) 5
(C) 6 (D) 3

Exercise 2

Directions—Read carefully the following given diagrams A, B, C, D and E. The positions or relations can be expressed by these diagrams. Find out the individual diagram which can expresses exactly the relation/position for the question 1 to 5 separately.

(A) (B) (C) (D) (E)

1. Females, Doctors, Mothers—
(A) A (B) B
(C) C (D) D
(E) E

2. Writers, Teachers, Men—
(A) A (B) B
(C) C (D) D
(E) E

3. Doctors, Engineers, Male—
(A) A (B) B
(C) C (D) D
(E) E

4. Body, Heart, Lungs—
(A) A (B) B
(C) C (D) D
(E) E

5. Criminal, Court, Judgement—
(A) A (B) B
(C) C (D) D
(E) E

6. By which diagram is Village, Districts, State defined ?

(A) (B)

(C) (D)

7. Select one diagram from four A, B, C, D diagrams. The diagram can express the best relation among the three classes.

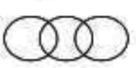
Minutes, Days, Months

(A) (B)

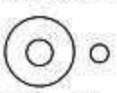
(C) (D)

8. Which of the following alternatives shares the relation among Family, Sons and Daughters ?

(A) (B)

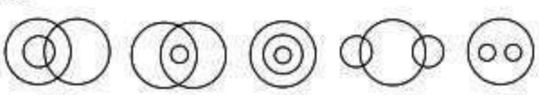
(C) (D) 

9. Which of the diagrams shows the relation among Pencil, Potato and Stationary ?

(A)  (B)

(C) (D)

Directions—(Q. 10–14) Answer the following questions based upon the diagrams. You have to recognize the diagram which maintains the relation among the given words.



(A) (B) (C) (D) (E)

10. Computer, Skilled graduate, Employed—
(A) A (B) D
(C) B (D) E

11. Rivers, Canals, Waterheads—
(A) A (B) B
(C) C (D) D

12. Rings, Ornaments rings, Diamond rigns—
(A) C (B) B
(C) A (D) D

13. Women, Wife, Working wife—
(A) A (B) B
(C) D (D) C

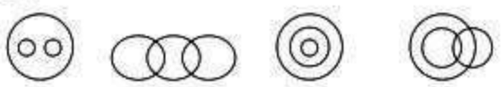
14. Students, First divisioner, Third divisioner—
(A) B (B) A
(C) E (D) C

15. Which of the diagrams represents this statement ? All people know English, some of them know Hindi also and those who know Hindi and Bengali also.

(A) (B)

(C) (D)

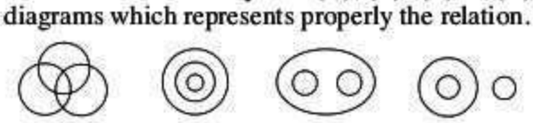
Directions—(Q. 16–19) Which of the following diagrams represents properly the relations given in the question ?



(A) (B) (C) (D)

16. Anti-Social elements, Pick pocket, Black marketers.
17. Mangoes, Apples, Fruits.
18. Musicians, Men, Women
19. Coffee, Tea, Beverage

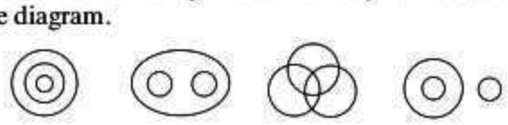
Directions—(Q 20–27) In each of the following questions, there are three words which are related in a particular sense. Mark any one (A), (B), (C) or (D) from the diagrams which represents properly the relation.



(A) (B) (C) (D)

20. Teacher, Writer, Singer
21. Parents, Father, Mother
22. Elephant, Carnivorous, Tiger
23. Cabinet, Minister, Home Minister
24. Professor, Researcher, Scientist
25. Sailor, Ship, Sea
26. Mother, Aborigines, Women
27. Hospital, Nurse, Patient

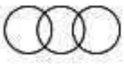
Directions—(Q. 28–34) In each of the following questions, three words are mentioned. These words have relationship among themselves. This relation is shown by any one of the four diagrams which is given below. Find out the diagram.



(A) (B) (C) (D)

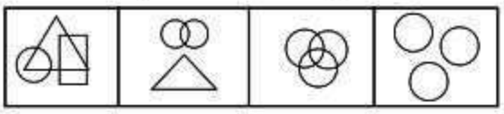
28. Window, Room, Wall

29. State, Country, City
30. Table, Chair, Furniture
31. Dog, Cat, Mammal
32. Girls, Athletics, Singers
33. Teachers, Graduates, Players
34. Copper, Paper, Wire
35. What is relation among Men, Engineers and Managers ?

(A) (B) 

(C) (D)

36. Which of the following Venn diagrams shows the relation among Friends, Philosophers and Guides ?



(A) (B) (C) (D)

Answers with Explanations

Exercise 1

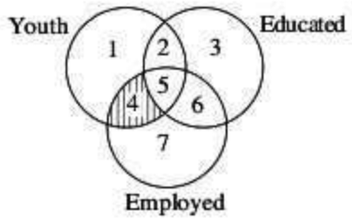
For Question No. 1 to 4.

Circle ○ → Member workers of organisation → 1, 4, 6

Square □ → Laborious workers → 2, 4, 5, 6

Rectangle ▭ → Experienced workers → 3, 5, 6

1. (D) 2. (B) 3. (A) 4. (D) 5. (D)
6. (B) 7. (A) 8. (B)
9. (B)



10. (C) Square → Doctors → 2, 3, 5, 7
Circle → Players → 4, 5, 6, 7
Rectangle → Article → 1, 3, 6, 7
Such doctors those are both the players and artists = 7.
11. (C) 12. (B) 13. (A) 14. (A) 15. (C)
16. (D)
17. (D) According to the statement, number of such students = 16 + 9 + 19 + 14 + 15 + 18 + 12 + 18 + 13 + 16 + 13 + 20 = 183.
18. (D) Total number of the students who opted for History
= 12 + 13 + 14 + 16 + 18 + 18 + 20 = 111
Total number of the students who opted for Geography
= 9 + 12 + 13 + 13 + 16 + 18 + 20 = 101
Total number of the students who opted for Science
= 13 + 15 + 16 + 18 + 18 + 19 + 20 = 119
Total number of the students who opted for Mathematics
= 9 + 13 + 13 + 14 + 15 + 18 + 20 = 102
Hence, from the above mentioned figures it is clear that the no. of students who have opted for Science subject are the most.
19. (A) According to the statement, total number of such students = 13 + 13 + 18 + 18 = 62
20. (C) According to the statement, total number of such students = 13 + 18 + 20 = 51
21. (C) 22. (A) 23. (B) 24. (A) 25. (C)
26. (B) 27. (C) 28. (C)

Exercise 2

1. (C) All mothers are always women and some doctors may be women and mothers, Some doctors may be only women while some doctors are neither women nor mothers.
2. (A) Some writers are teachers but not men and some writers are both teachers and men. In the same way some writers are men but not teachers.
3. (B) No doctor is engineer and male also.
4. (E) Heart and lungs are two different organs of the body and they are the parts of the body.
5. (B) Criminals, Court and Judgement are different objects or concepts.
6. (B) Villages is in district, district is in state.
7. (A) Minutes are in days, days are in months.
8. (C) Sons and daughters are different but they are the members of family.
9. (A) Pencil is an item of sationery but potato is a different thing.
10. (B) Computer skilled can be graduate, graduate can be computer skilled and both they are employed.
11. (D) Rivers and Canals are two separate unrelated things but they may be or may not be regular waterhead.
12. (A) Ring is an item of ornament and diamond ring is an item of ring.
13. (B) Married woman can be working wife or not working wife but both are women.
14. (C) First divisioner and third divisioner are separate to each other but they are students.
15. (A) 16. (A) 17. (A) 18. (B) 19. (A)
20. (A) A teacher may be writer and singer and may not be both.
21. (C) Mother and father are the part of parents but they show their individual identity.
22. (D) Tiger is carnivorous while Elephant is not.
23. (B) A cabinet comprises ministers and a Home minister is a minister.
24. (A) A professor may be researcher and scientist and may not be both.
25. (B) A ship sails on the sea and a sailor is in a ship.
26. (C) Mother and woman are the parts of aborigines.

Continued On Page 151

Ranking and Order

Ranking is based on the arrangement of things in a particular order. The arrangement may be on the basis of their position, size, age etc.

Position Series Test

In this series, questions are asked about the positions of the persons from up or down, or from left or right etc. Some important types are as given below :

Example 1. In a line of girls, if Kamla's position from the left is 15th and from the right her position is 17th, how many girls are there in the line ?

Answer with Explanation : Total no. of girls

= Kamla's position from the left + her position from the right – 1

= 15 + 17 – 1

= 31

Example 2. In a line of girls, Nivedita's position from the left is 18th and Priti's position from the right is 22nd. If there are 5 girls between them, what is the total number of girls in the line ?

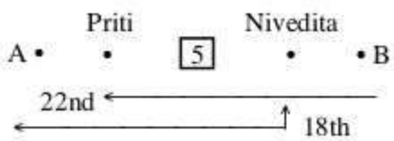
Answer with Explanation : In this question there are two possible positions.

Position I.

∴ Total no. of girls = 18 + 5 + 22

= 45

Position II.



∴ Total no. of girls = 22 + 18 – (5 + Priti + Nivedita)

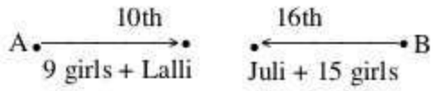
= 22 + 18 – 7

= 33

Example 3. In a line of girls, Juli's position from the left is 10th while Lalli's position from the right is 16th. When they interchange their positions, Juli's position becomes 20th from the left, then what will be the position of Lalli from the right ?

Solution : Original position :

After interchanging the positions :



Since Juli's new position after interchange is 20th from the left.

∴ Total no. of girls in the line = 20 + 15 = 35

Hence, Lalli's position from the right

= (35 – 10) + 1 = 26th

Example 4.

(i) In a class of boys and girls the position of Amar is 12th while the position of Meeta is 8th.

(ii) Among the boys the rank of Amar is 6th and among the girls the rank of Meeta is 3rd.

(iii) In the class the rank of Meeta is 52nd from the other end.

(iv) Among the boys the rank of Amar is 26th from the other end.

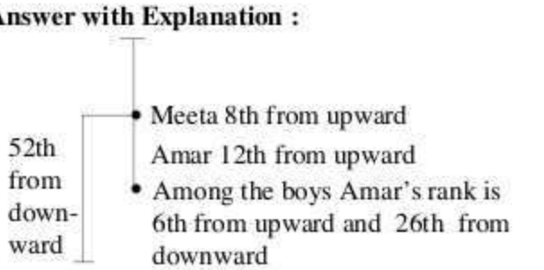
1. How many boys are there in the class ?
   (A) 28 (B) 29
   (C) 31 (D) Cannot be determined
   (E) None of these

2. What is the rank of Meeta among the girls from the other end ?
   (A) 23rd (B) 26th
   (C) 28th (D) Cannot be determined
   (E) None of these

3. How many boys are there before Meeta ?
   (A) 3 (B) 4
   (C) 5 (D) Cannot be determined
   (E) None of these

4. If in the end there is a girl, how many boys are there between Amar and the girl who is at the last end ?
   (A) 22 (B) 25
   (C) 47 (D) Cannot be determined
   (E) None of these

Answer with Explanation :



∴ Total number of students in the class

= (52 + 8) – 1 = 59

Total number of boys in the class

= (26 + 6) – 1 = 31

Total number of girls in the class

= 59 – 31 = 28

No. of students before Amar = 11

No. of boys before Meeta = 7 – 2 = 5

No. of girls before Amar = 11 – 5 = 6

∴ No. of girls between Amar and Meeta = 3.

1. (C) Total no. of boys in the class = 31
2. (B) Rank of Meeta from downward
   = (28 – 3) + 1 = 26th
3. (C) No. of boys before Meeta = 5
4. (B) No. of boys between Amar and the girl who is at lower end = 25.

Example 5. Vikas is taller than Shyam but shorter than Umesh. Umesh is taller than Rajat but shorter than Ganesh. If Shyam is taller than Rajat who is the shortest among all ?

(A) Ganesh (B) Umesh
(C) Rajat (D) Vikas
(E) Shyam

Answer with Explanation : (C) According to the decreasing heights they are as follows :

Ganesh > Umesh > Vikas > Shyam > Rajat

Example 6. Five boys participated in an education competition—

(1) Aloke ranked higher than Suresh.
(2) Suresh ranked higher than Prakash.
(3) Aloke ranked lower than Nikhil.
(4) Kabir ranked between Aloke and Suresh.

Who ranked the highest ?

(A) Nikhil (B) Aloke
(C) Suresh (D) Kabir
(E) Prakash

Answer with Explanation : (A) Arrangement in decreasing order of rank—

Nikhil, Aloke, Kabir, Suresh, Prakash.

Example 7. Arrange the following words in a meaningful order :

1. Family 2. Community
3. Member 4. Locality
5. Country.

(A) 3, 1, 2, 4, 5 (B) 3, 1, 2, 5, 4
(C) 3, 1, 4, 2, 5 (D) 3, 1, 4, 5, 2

Answer with Explanation : (A) Member is a part of family. Family is a part of community. Community lives in a locality and locality is a part of country. Thus, the correct order is 3, 1, 2, 4, 5.

Exercise

1. In a class of 39 students, Ravi is 7 ranks ahead of Sumit. If Sumit's rank is 17th from the last, what is Ravi's rank from the start ?

   (A) 14th (B) 15th
   (C) 16th (D) 17th

2. 10 boys are sitting in a line facing in the same direction. Abhijit who is 7th from the left end is just to the right of Sushant who is 5th from the right end. Sushant is 3rd to the right of Rupin. How many children are between Abhijit and Rupin ?

   (A) 1 (B) 2
   (C) 3 (D) Data inadequate
   (E) None of these

3. Three person A, B and C are standing in a queue. There are five persons between A and B and 8 persons between B and C. If there be 3 persons ahead of C and 21 persons behind A; what is the minimum number of persons in the queue ?

   (A) 41 (B) 40
   (C) 28 (D) 27
   (E) None of these

4. In a queue Vijay is 14th from the front while Jack is 17th from the end, while Mary is between Vijay and Jack. If Vijay be ahead of Jack and there are 48 persons in the queue, how many persons are there between Vijay and Mary ?

   (A) 8 (B) 7
   (C) 6 (D) 5
   (E) None of these

5. In a line of boys Kapil is 8th from the right and Nikunj is 12th from the left. When Kapil and Nikunj interchange their positions, Nikunj becomes 21st from the left. What will be the position of Kapil from the right ?

   (A) 8th (B) 17th
   (C) 21st (D) Cannot be determined
   (E) None of these

6. Aruna ranks 12th in a class of 46. What will be her rank from the last ?

   (A) 33 (B) 34
   (C) 35 (D) 37
   (E) None of these

7. In the class of Reeta, the boys are twice than of girls. Reeta ranked 17th from the top. If there are 7 girls ahead of Reeta and the rank of Reeta is 20th from the last in the class, how many girls are after Reeta downward ?

   (A) 4 (B) 1
   (C) 9 (D) Data inadequate
   (E) None of these

9. In a group of five girls, Kamini is second in height. Pooja is taller than Monika. Rupa is the tallest and Neelam is taller than Pooja. If they are arranged in ascending order of heights, who is at third position ?

   (A) Monika (B) Rupa
   (C) Monika or Rupa (D) Data is inadequate
   (E) None of these

10. If a is taller than b and c is taller than d. If d is taller than b, who is the tallest ?

    (A) a (B) b
    (C) c (D) Cannot be determined
    (E) None of these

11. Amit and Sumit are twin. Richa is younger than Sumit. Richa is younger than Jyoti but elder than Saurabh. Sumit is younger than Jyoti. Who is the eldest of all ?

    (A) Amit (B) Jyoti
    (C) Richa (D) Saurabh
    (E) None of these

12. Pune is larger than Jhansi. Sitapur is larger than Chittore. Rajgarh is not as large as Jhansi but smaller than Sitapur. Which is the smallest city out of these ?
(A) Pune (B) Jhansi
(C) Sitapur (D) Chittore
(E) None of these

13. The value of heavier coin is more than the value of lighter coin. Coin of Ram is heavier than the coin of Mohan and is of more value than the value of the coin of Ramesh. The value of the coin of Naresh is of more than the value of coin of Ram. The coin of Naresh is lighter than the coin of Yogesh. Coin of Ramesh is costler than the coin of Mohan. The value of whose coin is the most ?
(A) Ram (B) Ramesh
(C) Yogesh (D) Naresh
(E) None of these

14. Sonu is taller than Yatendra. Amit is taller than Sonu. Subhash is taller than Amit. Sattu is the tallest. If they are arranged according to their heights, who will be in the middle ?
(A) Sonu (B) Subhash
(C) Yatendra (D) Amit
(E) None of these

15. P is heavier than T but lighter than M. N is lighter than S and T. Q is heavier than D but lighter than N. S is not heavier than M. Who is the heaviest ?
(A) M (B) P
(C) S (D) Data is inadequate
(E) None of these

16. A is older than B but younger than C. D is younger than E but older than A. If C is younger than D, who is the eldest of all ?
(A) A (B) E
(C) D (D) C
(E) None of these

17. Asha is taller than Babu but shorter than Chetan. Dimple is taller than Esha who is taller than Chetan. Who is the tallest person in the group ?
(A) Chetan (B) Dimple
(C) Esha (D) Asha
(E) None of these

18. X knows more than A. Y knows as much as B. Z knows less than C. A knows more than B. Who is the best knowledgeable person amongst all ?
(A) X (B) Y
(C) A (D) C
(E) None of these

19. Five friends P, Q, R, S and T went to college independently. Each one of them reached at a different time. If only Q reached after R & S, who was the last person to reach ?
(A) P
(B) T
(C) Q
(D) Cannot be determined
(E) None of these

20. Among A, B, C, D and E each scoring different marks in a test, C scored more than D but not as much as E. E scored more than A who scored less than B. Who score third highest marks ?
(A) B (B) A
(C) C (D) Data inadequate
(E) None of these

21. Among A, B, C, D and E each reaching school at a different time, C reaches before D and A and only after B. E is not the last to reach school. Who among them reached school last ?
(A) D (B) A
(C) C (D) Data inadequate
(E) None of these

22. In a column of 20 boys, D is fourteenth from the front and F is ninth from the bottom. How many boys are there between D and F ?
(A) 2 (B) 3
(C) 4 (D) Data inadequate
(E) None of these

23. Among M, N, P, Q and T each securing different marks in a subject, N secured more than only P. T and G secured less marks than only M. Who among them secured least marks ?
(A) P (B) T
(C) P or T (D) Data inadequate
(E) None of these

24. Which of the following number sequence represents a correct sequence ?
1. Seed 2. Flower
3. Soil 4. Plant
5. Fruit.
(A) 4, 2, 5, 1, 3 (B) 2, 5, 4, 1, 3
(C) 3, 2, 1, 5, 4 (D) 3, 1, 4, 2, 5
(E) None of these

Directions—(Q. 25-29) Find the meaningful sequence in each of the following questions—

25. 1. Yarn 2. Cotton
3. Soil 4. Cloth
5. Shirt 6. Plant.
(A) 3, 2, 1, 4, 6, 5 (B) 2, 6, 3, 1, 5, 4
(C) 3, 6, 2, 1, 4, 5 (D) 1, 2, 3, 6, 5, 4
(E) None of these

26. 1. Yarn 2. Sowing
3. Cotton 4. Fertilizer
5. Cloth 6. Seed.
(A) 4, 2, 6, 3, 1, 5 (B) 2, 6, 4, 1, 3, 5
(C) 4, 1, 6, 3, 5, 2 (D) 6, 2, 4,3, 1, 5
(E) None of these

27. 1. Study 2. Books
3. Examination 4. Students
5. Result.

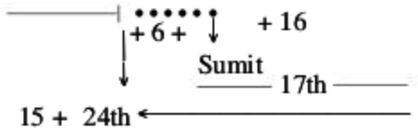
(A) 4, 2, 3, 1, 5 (B) 4, 2, 1, 3, 5
(C) 2, 1, 4, 3, 5 (D) 2, 3, 1, 4, 5
(E) None of these

28. 1. Treatment 2. Doctor
3. Disease 4. Diagnosis
5. Medicine.
(A) 3, 2, 4, 5, 1 (B) 2, 4, 3, 5, 1
(C) 4, 3, 2, 5, 1 (D) 4, 2, 3, 5, 1
(E) None of these

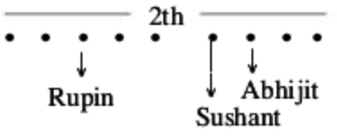
29. 1. Plant 2. Fertilizer
3. Seed 4. Leaf
5. Flower.
(A) 1, 3, 4, 5, 2 (B) 3, 2, 4, 5, 1
(C) 5, 4, 3, 2, 1 (D) 3, 2, 1, 4, 5
(E) None of these

30. Which one of the given responses would be a meaningful order of the following ?
1. Probation 2. Interview
3. Selection 4. Appointment
5. Advertisement 6. Application.
(A) 5, 6, 4, 2, 3, 1 (B) 5, 6, 3, 2, 4, 1
(C) 5, 6, 2, 3, 4, 1 (D) 6, 5, 4, 2, 3, 1
(E) None of these

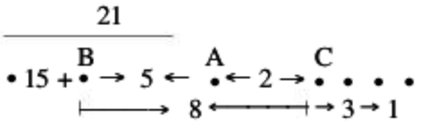
Answers with Explanations

1. (C) 

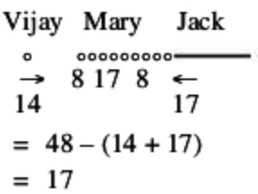
Ravi's rank from the start = 39 – (17 + 7) + 1
= 16th

2. (C) 

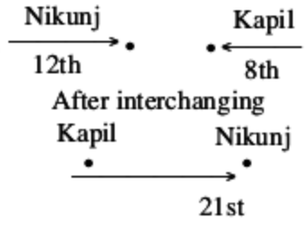
∴ There are 3 children between Abhijit and Rupin.

3. (C) 

∴ Total number of persons in the queue
= 15 + 1 + 5 + 1 + 2 + 1 + 3
= 28

4. (A) No. of persons between Vijay and Jack


= 48 – (14 + 17)
= 17
Now Mary lies in the middle of these 17 persons.
Hence the number of Persons between Vijay and Mary = 8.

5. (B) 

∴ Total no. of boys in the line = 21 + 7 = 28
∴ Position of Kapil from the right = 28 – 11 = 17th

6. (C) Aruna's rank from the last = (46 – 12) + 1
= 35

7. (A) Total number of students in the class of Reeta
= 16 + 19 + 1
= 36
∴ No. of boys in the class = $\frac{36 \times 2}{3}$ = 24
and No. of girls in the class = 36 – 24 = 12
Since the rank of Reeta from the top is 8th
∴ No. of girls after Reeta downward
= 12 – 8 = 4

8. (C) Total no. of children = 13 + 6 – 1 = 18
∴ Position of Mona from the right
= 18 – 5 + 1 = 14th

9. (E) On arranging in ascending order of heights.
Monika < Pooja < Neelam < Kamini < Rupa.
Hence, Neelam is at third position.

10. (D) a > b, c > d > b.
∴ Who is the tallest cannot be found.

11. (B) Jyoti > Amit = Sumit > Richa > Saurabh.

12. (D) Pune > Jhansi > Rajgarh > Chittore

13. (C) Coin of Ram > Coin of Mohan ...(1)
Value of Ram's coin > Value of Ramesh's coin
∴ Coin of Ram > Coin of Ramesh ...(2)
Similarly,
Coin of Naresh > Coin of Ram ...(3)
Coin of Yogesh > Coin of Naresh ...(4)
Coin of Ramesh > Coin of Mohan ...(5)
∴ From all the eqns.
Yogesh > Naresh > Ram > Ramesh > Mohan
Hence, the value of Yogesh's coin is the most.

14. (D) Sattu > Subash > Amit > Sonu > Yatendra.

15. (A) These can be arranged in three ways :
M > P > T > S > N > Q > D
or
M > P > S > T > N > Q > D
or
M > S > P > T > N > Q > D
In each position M is the heaviest.

16. (B) C > A > B
E > D > A
D > C
∴ E > D > C > A > B
So, E is the eldest of all.

Continued On Page 224

Logical Deduction or Puzzle Test

Question based upon analytical reasoning are undoubtedly the longest and most time consuming of all types of question that can be asked in various examinations. However, their importance in exams cannot be underestimated as these questions decide merit of a Test.

Example 1. Read the following information carefully and answer the questions that follow.

There are six cities A, B, C, D, E and F.

A is not a hill station.

B and E are not historical places.

D is not an industrial city.

A and D are not historical places.

A and B are not alike.

1. Which two cities are industrial centres ?
   (A) A and B (B) E and F
   (C) C and D (D) B and F
   (E) A and D
2. Which two cities are historical places ?
   (A) A and C (B) B and F
   (C) C and F (D) B and E
   (E) A and D
3. Which two cities are hill stations ?
   (A) A and B (B) C and A
   (C) B and D (D) A and F
   (E) None of these
4. Which city is a hill station and an industrial centre but not a historical place ?
   (A) E (B) F
   (C) A (D) B
   (E) C
5. Which two cities are neither historical places nor industrial centres ?
   (A) A and B (B) D and E
   (C) F and C (D) B and D
   (E) None of these

Some important steps to solve such type of questions.

Read the question carefully by keeping in mind every point or detail. It will take a few seconds. After reading the question, you will get the general idea as to what the general theme of the problem is. Determine the usefulness of each of the information and classify all the information into (A) Actual information (B) Useful secondary information and finally (C) Negative information. Refer to example given below :

Detailed Explanation—

Step I—The informations can be analysed in the following manner.

	A	B	C	D	E	F	G
Historical							
Industrial							
Hill Station							

Step II—In above mentioned example, we see that the first and last sentences have useful secondary information whereas all the remaining have negative information. By studying the second, third, fourth and fifth sentences we put × mark.

	A	B	C	D	E	F
Historical	×	×		×	×	
Industrial	✔			×		
Hill Station	×			✔		

We can observe that above table gives some definite information about A and D. When A is neither a historical city nor a hill station. It is, therefore, an industrial city. In the same way D is neither historical nor industrial so it must be a hill station. We can ✔ mark at the appropriate places.

Step III—Finally we come to useful secondary information and negative information. For instance, A and B are not alike. This means that B is not an industrial city. As B is not a historical place. So, it must be hill station. Now, all the remaining information are negative. A lack of negative information about a city would mean that the city does have the quality whose absence is not mentioned.

Here in the example, there are no negative information about C and F and partly about E. We can assure that C and F are hill station, industrial and historical cities and E is industrial as well as hill station.

Now, our final Table is as below :

	A	B	C	D	E	F
Historical	×	×	√	×	×	√
Industrial	√	×	√	×	√	√
Hill Station	×	√	√	√	√	√

On the basis of above table, the answers can be drawn.

1. (B) 2. (C) 3. (C) 4. (A) 5. (D)

The problems can be classified into the following : (1) Classification or categorization, (2) Question based on blood relation, (3) Seating and placing arrangements, (4) Comparision type test, (5) Sequential order of things, (6) Selection based on certain given pre-conditions.

Example 2. Six friends P, Q, R, S, T and U are the members of a club. They play Football, Cricket, Tennis, Basketball, Badmintion and Volleyball.

1. T, who is taller than P and S, plays football.

2. The tallest member plays basketball.
3. The shortest member plays volleyball.
4. Q and S neither play volleyball nor play basketball.
5. R plays volleyball.
6. According to height, T is in between Q, who plays football, and P is shorter than T.

Who plays Basketball ?

(A) Q (B) R
(C) S (D) U
(E) None of these

Solution : Writing these information on a chart.

Member	Name of the game	Height
P		Shorter than T
Q	Football	Taller than T
R	Volleyball	Shortest
S		Shorter than T
T	Tennis	Shorter than U
U	Basketball	Tallest

Example 3. Six students P, Q, R, S, T and U are studying different subjects for their Master Degree. The subjects are English, History, Philosophy, Physics, Statistics and Mathematics.

1. In these students, two live in hostel, two are paying guests and remaining two are living in their home.
2. R is not a paying guest and study Philosophy.
3. The students who are studying History and Statistics, are not paying guests.
4. T and S study Mathematics and Statistics respectively.
5. U and S live in the hostel.
6. T is a paying guest and Q lives in his home.

Find out who is in study of English ?

(A) S (B) T
(C) U (D) R
(E) None of these

Solution : Writing the information on a chart.

Name of the students	Subjects	Residence
P	English	Paying guest
Q	History or Statistics	Home
R	Philosophy	Home
S	Physics	Hostel
T	Mathematics	Paying guest
U	Statistics or History	Hostel

From the above chart, it is clear that P studies English which is not given in options.

Example 4. Read the following information carefully and answer the questions that are given below.

(i) P, Q, R, S, T and U are travelling in a bus.
(ii) There are two reporters, two technicians, one photographer and one writer in the group.
(iii) The photographer P is married to S who is a reporter.
(iv) The writer is married to Q who is in the same profession as that 'U'.
(v) P, R, Q, S are two married couples and nobody in the group has same profession.
(vi) U is brother of R.

1. Which is the following is a pair of technicians?
(A) RS (B) SU
(C) PT (D) QU
2. Which of the following is a pair of reporters ?
(A) PQ (B) RT
(C) ST (D) SU
3. How is R related to U ?
(A) Brother (B) Sister
(C) Uncle (D) Cannot be determined
4. Which of the followings is a couple ?
(A) PQ (B) QR
(C) QS (D) PT
5. Which of the following is a pair of husbands ?
(A) PQ (B) PR
(C) QS (D) Cannot be determiend

Solution : From the statement (iii), The Photographer is married to S who is reporter. It means one couple is PS and another is (RQ) From statement (V) in six persons P's profession is photographer and S's profession is reporter, it means that in remaining four members, there are two technicians one writer and one reporter. The writer is married to B who is in same profession as that of U. Another couple is RQ in which R is writer and Q and U have same profession becasue there are two technicians. Now, only T is there and his profession is reporter because there are two reporters and we have known one reporter which has been given in the statement (iii). It is clear that T must be the second reporter.

P	Q	R	S	T	U
↓	↓	↓	↓	↓	↓
Photographer	Technician	Writer	Reporter	Reporter	Technician

P + S — First couple.

R + Q — Second couple.

1. (D) 2. (C) 3. (D) 4. (B) 5. (D)

Example 5. Study the following information carefully and answer the given question below it. Five friends A, B, C, D and E are sitting on a bench.

(i) A is sitting next to B.
(ii) C is sitting next to D.
(iii) D is not sitting with E.
(iv) E is on the left end of the bench.
(v) C is on the second position from the right.
(vi) A is on the right of B and E.
(vii) A and C sitting together.

1. Where is A sitting ?
(A) Between B and D (B) Between D and C
(C) Between E and D (D) Between C and E
(E) Between B and C

2. Who is sitting in the centre ?
   (A) A (B) B
   (C) C (D) D
   (E) E
3. C is sitting between—
   (A) B and D (B) A and E
   (C) D and E (D) A and D
   (E) A and B
4. What is the position of D ?
   (A) Extreme left (B) Extreme right
   (C) Third from left (D) Second from left
   (E) None of these
5. What is the position of B ?
   (A) Second from right (B) Centre
   (C) Extreme left (D) Second from left
   (E) None of these

Solution : From the given information first of all, we see which one is positive information and we find that 4th and 5th sentences constitute definite and positive information. Ist, 2nd, 6th and 7th are comparative information and remaining 3rd is a negative information. We start from the definite information and draw the following diagram

E … … C …

and now with the help of comparative information which tells about E and C from the 7th, 2nd and 6th sentences which lead to

EBAC … and finally with the help of 2nd sentence—

E B A C D

1. (E) 2. (A) 3. (D) 4. (B) 5. (D)

Example 6. Study the following information carefully and answer the questions below.

A team of five is to be selected from amongst five boys A, B, C, D and E and four girls P, Q, R and S. Some criteria for selection are—

A and S have to be together

P cannot be put with R

D and Q cannot go together

C and E have to be together

R cannot be put with B

Unless otherwise stated, these criteria are applicable to all questions below.

1. If two of the members have to be boys, the team will consist of—
   (A) ABSPQ (B) ADSQR
   (C) BDSRQ (D) CESPQ
2. If R be one of the members, the other members of the team are—
   (A) PSAD (B) QSAD
   (C) QSCE (D) SACE
3. If two of the members are girls and D is one of the members, the members of the team other than D are—
   (A) PQBC (B) PQCE
   (C) PSAB (D) PSCE
4. If A and C are the members, the other members of the team cannot be—
   (A) BES (B) DES
   (C) ESP (D) PQE
5. If including P at least three members are girls, the members of the team other than P are—
   (A) QSAB (B) QSBD
   (C) QSCE (D) RSAD

Solution :

1. (A) If A is selected naturally S has to be selected.
   If B is selected R cannot be selected.
   If D is selected Q cannot be selected.
   So, the options ADSQR and BDSRQ are wrong and CESPQ is not possible because S has to be accompanied with A.
2. (D) If R is selected P cannot be selected, therefore option PSAD is wrong.
   D and Q cannot go together. So, QSAD is wrong.
   S and A have to be together. So, QSCE is wrong.
   Now, the team combination will be SACE
3. (C) If D is selected Q cannot be selected. therefore PQBC and PQCE are not correct. S and A have to be always together.
   Therefore, PSCE is wrong.
4. (D) If A and C are the members, S and E have to be selected. Therefore, option (D) PQE is not the correct combination.
5. (A)

Exercise 1

Directions—(Q. 1–5) Study the following information carefully and answer the questions given below—

M, V, K, D, T, J and R are seven friends studying in different classes—IIIrd, IVth, Vth, VIth, VIIth, VIIIth and IXth standards. Each of them has different favourite colours—yellow, blue, red, white, black, green and violet. J likes red and studies in class Vth. R likes violet and studies in Class IIIrd. M studies in Class VIIIth and does not like green and yellow. K likes white and does not study in VIIth and in IVth. D studies in VIth and likes black. T does not study in IVth. V does not like green.

1. In which standard does 'V' study ?
   (A) IVth (B) IXth
   (C) VIIIth (D) Data inadequate
   (E) None of these
2. What is M's favourite colour ?
   (A) Red (B) Yellow
   (C) Green (D) Blue
   (E) None of these
3. In which standard does K study ?
   (A) IIIrd (B) Vth
   (C) IVth (D) VIIth
   (E) None of these
4. What is V's favourite colour ?
   (A) Green (B) Red
   (C) Yellow (D) Data inadequate
   (E) None of these

5. In which standard does T study ?
(A) IVth (B) VIIth
(C) VIIIth (D) IXth
(E) None of these

Directions—(Q. 6–10) Study the following information carefully to answer these questions—

Seven candidates Harish, Samir, Nilesh, Shailaja, Nikita, Laxman and Sujata are to be interviewed for selection as Trainee Officers by different panels I to VII for different companies A, B, C, D, E, F and G, not necessarily in the same order.

Nilesh is interviewed by panel IV for Company A. Samir is interviewed by panel III but not for company C or D. Harish is interviewed for company B but not by panel I or II. Nikita is interviewed by panel VI for company E. Panel VII conducts the interview for company F. Shailaja is interviewed by panel I but not for company C. Panel II does not interview Laxman.

6. Shailaja is interviewed for which company ?
(A) A (B) G
(C) F (D) D
(E) None of these

7. Panel II conducts interview for which company ?
(A) C (B) F
(C) G (D) B
(E) None of these

8. Who is interviewed for company G ?
(A) Nikita (B) Samir
(C) Shailaja (D) Laxman
(E) None of these

9. Who is interviewed for company F ?
(A) Shailaja (B) Sujata
(C) Laxman (D) Cannot be determined
(E) None of these

10. Which candidate is interviewed by panel V ?
(A) Harish (B) Laxman
(C) Sujata (D) Shailaja
(E) None of these

Directions—(Q. 11–15) These questions are based on the following information—

Seven persons R, J, M, Q, L, T and K conduct workshop on Developing Managerial skills in seven different companies A, B, C, D, E, F and G on a different day of the week from Monday to Sunday. The order of persons, companies and days of the week are not necessarily the same.

J organizes workshop in Company D on Wednesday. Q does not conduct workshop for companies A or C and conducts on the next day of L who conducts the workshop for Company F. T conducts workshop for Company E on Friday. K conducts workshop on Monday but not for Company C or G. M conducts workshop for Company A but not on Tuesday.

11. Who conducts workshop on Saturday ?
(A) M (B) Q
(C) L (D) Q or L
(E) None of these

12. On which day does Q conduct the workshop ?
(A) Sunday (B) Saturday
(C) Tuesday (D) Cannot be determined
(E) None of these

13. M conducts workshop on which day ?
(A) Saturday (B) Sunday
(C) Tuesday (D) Thursday
(E) None of these

14. Which of the following combinations of person-company and day is **correct** ?
(A) K–B–Wednesday (B) R–B–Monday
(C) K–C–Monday (D) K–G–Sunday
(E) None of these

15. Who conducts workshop for Company C and on which day ?
(A) R, Thursday (B) R, Tuesday
(C) Q, Saturday (D) Q, Sunday
(E) None of these

Directions—(Q. 16–20) Study the following information carefully to answer these questions.

Seven friends H, I, J, K, V, W and X study different disciplines *viz.*, Arts, Commerce, Science, Engineering, Architecture, Management and Pharmacy not necessarily in the same order. Each of them belongs to a different state *viz.*, Andhra Pradesh, Uttar Pradesh, Maharashtra, Karnataka, Kerala, Madhya Pradesh and Punjab but not necessarily in the same order.

J studies Engineering and does not belong to either Uttar Pradesh or Punjab. The one who belongs to Madhya Pradesh does not study Architecture or Pharmacy. H belongs to Maharashtra. V belongs to Kerala and studies Science. The one who belongs to Andhra Pradesh studies Commerce. K studies Management and X studies Arts. I belongs to Karnataka and does not study Architecture. The one who studies Arts does not belongs to Punjab.

16. Which of the following combination of state and subject is correct ?
(A) Uttar Pradesh—Arts
(B) Uttar Pradesh—Science
(C) Kerala—Management
(D) Punjab—Science
(E) None of these

17. W belongs to which state ?
(A) Kerala (B) Madhya Pradesh
(C) Uttar Pradesh (D) Andhra Pradesh
(E) None of these

18. Who belongs to Madhya Pradesh ?
(A) W (B) J
(C) K (D) X
(E) None of these

19. Which subject is studied by I ?
(A) Arts (B) Commerce
(C) Pharmacy (D) Management
(E) None of these

20. Who studies Architecture ?
(A) V (B) X
(C) W (D) Cannot be determined
(E) None of these

Directions—(Q. 21–25) Study the following information carefully and answer the questions given below—

P, Q, R, S, T, V and W are seven friends working in a call center. Each of them has different day offs in a week from Monday to Sunday not necessarily in the same order. They work in three different shifts I, II and III with at least two of them in each shift.

R works in shift II and his day off is not Sunday. P's day off is Tuesday and he does not work in the same shift with either Q or W. None of those who work in shift I has day off either on Wednesday or on Friday. V works with only T in shift III. S's day off is Sunday. V's day off is immediate next day of that of R's day off. T's day off is not on Wednesday. W's day off is not on the previous day of P's day off. S works in shift I. Q does not work in the same shift with R and his day off is not on Thursday.

21. Which of the following is W's day off ?
(A) Tuesday (B) Monday
(C) Saturday (D) Data inadequate
(E) None of these

22. Which of the following is R's day off ?
(A) Friday (B) Thursday
(C) Tuesday (D) Wednesday
(E) None of these

23. Which of the following groups of friends work in shift II ?
(A) RP (B) RV
(C) QWS (D) Data inadequate
(E) None of these

24. Which of the following is Q's day off ?
(A) Friday (B) Wednesday
(C) Thursday (D) Monday
(E) None of these

25. Which of the following groups of friends work in shift I ?
(A) RV (B) RP
(C) QWS (D) Data inadequate
(E) None of these

Directions—(Q. 26–30) Study the following information carefully to answer these questions—

A group of people has six family members and an advocate. These are L, M, N, O, P, Q and R and having different professions. Each one of them is a journalist, businessman, architect, doctor and pilot but not necessarily in this order. There are three males and three females in the family out of which there are two married couples. M is a businessman and is the father of P, Q is a doctor and grandfather of P. N is a housewife and is daughter-in-law of O. L is neither a pilot nor a journalist. R is an advocate. N is not the mother of P and O is not married to M. No lady is a journalist.

26. Which of the following groups represents the three ladies in the group ?
(A) N, P, L (B) P, L, N
(C) L, N, O (D) O, P, L
(E) None of these

27. Who is married to Q ?
(A) N (B) O
(C) L (D) Can't be determined
(E) None of these

28. Who among the following family members is an architect ?
(A) L (B) O
(C) P (D) Can't be determined
(E) None of these

29. Which of the following is the profession of P ?
(A) Architect (B) Pilot
(C) Architect or pilot (D) Journalist
(E) None of these

30. How is Q related to O ?
(A) Father (B) Mother
(C) Mother-in-law (D) Son-in-law
(E) None of these

Directions—(Q. 31–35) Study the following information carefully and answer the questions given below—

A, M, P, J, H, D and K are seven students of a school. They study in Std. III, IV and V with alteast two in any one standard. Each of them has different choice of colour from—blue, red, green, yellow, black, white and brown, not necessarily in the same order. M studies in Std. IV with only D who likes red colour. A studies in Std. V and does not like either blue or green. H does not study in Std. V and likes yellow colour. P and J study in the same Std. but not with A. None of those who study in Std. III likes white. The one who likes black studies in Std. IV. J likes brown colour. P does not like blue colour.

31. Which colour does A like ?
(A) Brown (B) Red
(C) White (D) Data inadequate
(E) None of these

32. Which colour does P like ?
(A) Green (B) Blue
(C) Blue or Green (D) Data inadequate
(E) None of these

33. In which Std. do three of them study ?
(A) III only (B) V only
(C) III or V only (D) Data inadequate
(E) None of these

34. Which of the following combinations is definitely correct ?
(A) III – H – Black (B) IV – K – Blue
(C) V – A – Blue (D) IV – D – Green
(E) All are incorrect

35. Which colour does K like ?
(A) Green (B) Blue
(C) Blue or Green (D) Data inadequate
(E) None of these

Directions—(Q. 36–40) These questions are based on the following information. Study it carefully to answer the questions.

Seven officers L, M, N, P, Q, R & S work in three different shifts I, II & III with at least two persons working in each shift. Each one of them has a different weekly off from Monday to Sunday not necessarily in the same order.

M works in second shift only with R whose weekly off is on Friday. Q's weekly off is on the next day of L's weekly off and both of them work in different shifts. P works in third shift and his weekly off is on Saturday. S has a weekly of on Monday and he works in first shift. The one who has a weekly off on Sunday works in first shift. L and R do not work in the same shift, L's weekly off is on Tuesday.

36. Whose weekly off falls on Thursday ?
(A) L
(B) N
(C) Q
(D) Cannot be determined
(E) None of these

37. Which of the following combinations of shift, person and weekly off is definitely **correct** ?
(A) II, M, Sunday (B) III, N, Sunday
(C) II, P, Sunday (D) I, L, Tuesday
(E) None of these

38. Whose weekly off is on Sunday ?
(A) L (B) M
(C) N (D) Q
(E) None of these

39. On which day is Q's weekly off ?
(A) Tuesday
(B) Wednesday
(C) Sunday
(D) Cannot be determined
(E) None of these

40. Which of the following group of officers work is shift I ?
(A) L, N, S (B) L, S
(C) N, S (D) L, P, Q
(E) None of these

Directions—(Q. 41–45) Study the following information carefully and answer the given questions.

P, Q, R, S, T, W and Z are seven students studying in three different institutes – A, B and C. There are three girls among the seven students who study in each of the three institutes. Two of the seven students study BCA, two study medicine and one each studies Aviation Technology, Journalism and MBA. R studies in the same college as P who studies MBA in college B. No girl studies journalism or MBA. T studies BCA in college A and his brother W studies Aviation Technology in college C. S studies journalism in the same college as Q. Neither R nor Z study BCA. The girl who studies BCA does not study in college C.

41. Which of the following pairs of students study medicine ?
(A) QZ (B) WZ
(C) PZ (D) SZ
(E) None of these

42. In which college does Q study ?
(A) A (B) B
(C) C (D) Data inadequate
(E) None of these

43. In which of the colleges do three of them study ?
(A) A (B) B
(C) A and B (D) C
(E) None of these

44. What is the field of study of Z ?
(A) Aviation Technology
(B) BCA
(C) MBA
(D) Medicines
(E) None of these

45. Which of the following three represents girls ?
(A) SQR (B) QRZ
(C) SQZ (D) Data inadequate
(E) None of these

Answers with Explanations

For Solution from Questions 1–5 :

Friend	Class	Colour
M	VIII	Blue
V	IV	Yellow
K	IX	White
D	VI	Black
T	VII	Green
J	V	Red
R	III	Purple

1. (A) 2. (D) 3. (E) 4. (C) 5. (B)

For Solution from Questions 6–10 :

Harish	V	B
Samir	III	G
Nilesh	IV	A
Shailaja	I	D
Nikita	VI	E
Laxman	VII	F
Sujata	II	C

6. (D) 7. (A) 8. (B) 9. (C) 10. (A)

For Q. 11 to 15 :

R	C	Tuesday
J	D	Wednesday
M	A	Thursday
Q	G	Sunday
L	F	Saturday
T	E	Friday
K	B	Monday

11. (C) 12. (A) 13. (D) 14. (E) 15. (B)

For Q. 16 to 20 :

H	Architecture	Maharashtra
I	Pharmacy	Karnataka
J	Engineering	Madhya Pradesh
K	Management	Punjab
V	Science	Kerala
W	Commerce	Andhra Pradesh
X	Arts	Uttar Pradesh

16. (A) 17. (D) 18. (B) 19. (C) 20. (E)

For Q. 21 to 25 :

Friends	Shift	Off day
P	II	Tuesday
Q	I	Monday
R	II	Wednesday
S	I	Sunday
T	III	Friday
V	III	Thursday
W	I	Saturday

21. (C) 22. (D) 23. (A) 24. (D) 25. (C)

For Q. 26–30 :

Members	Profession	Sex	Relation
L	Architect	Female	Wife of M
M	Businessman	Male	Father of P, son of Q, Husband of L
N	House-wife	Female	Daughter-in-law of O
O	Pilot	Female	Wife of Q
P	Journalist	Male	
Q	Doctor	Male	Grandfather of P, Father of M, Husband of O
R	Advocate		

26. (C) 27. (B) 28. (A) 29. (D) 30. (E)

For Q. 31 to 35 :

Students	Standard	Colour
A	V	White
M	IV	Black
P	III	Green
J	III	Brown
H	III	Yellow
D	IV	Red
K	V	Blue

31. (C) 32. (A) 33. (A) 34. (E) 35. (B)

For Q. 36 to 40 :

Officers	Shift	Weekly off
L	I	Tuesday
M	II	Thursday
N	I	Sunday
P	III	Saturday
Q	III	Wednesday
R	II	Friday
S	I	Monday

36. (E) M's weekly off falls on Thursday.

37. (D) 38. (C) 38. (B) 40. (A)

From 41 to 45 :

Student	Institute	Sex	Courses
P	B	Boy	MBA
Q	A	Girl	BCA
R	B	Girl	Medicine
S	A	Boy	Journalism
T	A	Boy	BCA
W	C	Boy	Aviation Technology
Z	C	Girl	Medicine

41. (E) 42. (A) 43. (A) 44. (D) 45. (B)

Continued from Page 140

27. (C) Patient and nurse are found in hospital and they are different person.

28. (A) A window lies in a wall which lies within a room.

29. (A) A city lies within a state, which lies within a country.

30. (B) Table and chair are two different items but both belong to the class of furniture.

31. (B) Dogs and cats are entirely different from each other but both are pet animals.

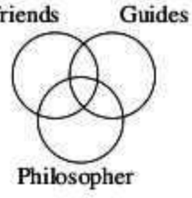
32. (C) Some girls can be athletic, some athletics can be singers and some girls also can be singers.

33. (C) Some teachers can be players, some players can be graduates and some teachers can be graduates.

34. (D) Wire is made of copper while paper is entirely different.

35. (B) A man may be and may not be an engineer and manager.

36. (C)



Inequality

In reasoning inequality means 'To find the relation of greater, smaller, equal or not equal among the elements on the basis of the given facts. The questions on this chapter are generally asked in all examinations. These questions are based on the mathematical rules greater (>) smaller (<), equal (=) and not equal (≠).

Important points to remember—

1. If it is said that A is greater than B it means A always is greater than B or B is always less than A.
2. If A is smaller than B (A < B) it means that A is always smaller than B or B is greater than A.
3. If A = B then A is always equal to B and nothing except this.
4. If A ≠ B, *i.e.*, A is not equal to B it means either A > B or A < B.
5. If A ≯ B or A ≤ B, *i.e.*, A is not greater than B, it means either A = B or A < B.
6. If A ≮ B or A ≥ B, *i.e.*, A is not less than B, it means either A = B or A > B.
7. A ≥ B, *i.e.*, A is greater and equal to B it, means A can be greater than B and A can be equal to B.
8. If A ≤ B, *i.e.*, A is smaller and equal to B, it means A can be less than B or A can be equal to B.

Example 1. In these questions the symbols ⊖, ⊕, ⊖, ⊗, and ⊗ are used with the following meanings.

x ⊕ y means x is greater than y.

x ⊕ y means either x is greater than or equal to y.

x ⊖ y means x is equal to y.

x ⊗ y means x is smaller than y

and x ⊗ y means either x is smaller or equal to y.

Statements : k ⊕ P; L ⊗ R; K ⊖ R.

Conclusions : I. k ⊗ R

II. k ⊕ R.

Solution : k ⊕ P ⇒ k > P; L ⊗ R ⇒ L < R and k ⊖ R ⇒ k = R.

∴ P < K = R > L

I. k ⊗ R ⇒ k < R (False)

II. k ⊕ R ⇒ k > R (False)

Hence both the conclusions are false.

Example 2. Statements : M ⊗ L; L ⊗ S; S ⊕ R

Conclusions : I. M ⊗ S

II. M ⊗ k

Solution : M ⊗ L ⇒ M < L; L ⊗ S ⇒ L < S and S ⊕ R ⇒ S > k

∴ M < L < S > k

I. M ⊗ S ⇒ M < S (True)

II. M ⊗ k ⇒ M < k (False)

Hence only I is true.

Example 3. Statements : G ⊕ H; H ⊕ L; L ⊕ M

Conclusions : I. H ⊕ M

II. H ⊖ M

Solution : G ⊕ H ⇒ G > H; H ⊕ L ⇒ H ≥ L and L ⊕ M ⇒ L ≥ M

∴ G > H ≥ L ≥ M

I. H ⊕ M ⇒ H > M

II. H ⊖ M ⇒ H = M

Thus we see H may be greater than M or H may be equal to M. Hence either I is true or II is true.

Exercise

Directions–(Q. 1–5) Symbols @, %, ★, $ and # are used with following meanings—

'A @ B' means 'A is smaller than B'.

'A % B' means 'A is greater than B'.

'A ★ B' means 'A is neither greater than nor smaller than B'.

'A $ B' means 'A is either smaller than or equal to B.'

'A # B' means 'A is either greater than or equal to B'.

Now in each of the following questions assuming the given statements to be true, find which of the two conclusions I and II given below them is/are **definitely true** and give your answer accordingly. Give answer—

(A) If only conclusion I is true.

(B) If only conclusion II is true.

(C) If either conclusion I or conclusion II is true.

(D) If neither conclusion I nor conclusion II is true.

(E) If both conclusions I and II are true.

1. **Statements :** G @ H, H ★ Q,
Q $ M
Conclusions : I. M % G
II. H $ M

2. **Statements :** F ★ B, B @ E, E # J
Conclusions : I. F @ E
II. J $ B

3. **Statements :** R $ H, H % M,
M # F
Conclusions : I. F $ H
II. F @ R

4. **Statements :** T # L, L % W,
W @ V
Conclusions : I. L % V
II. T % W

5. **Statements :** K % L, L # T, I $ T
Conclusions : I. L % I
II. L ★ I

Directions—(Q. 6–11) In the following questions, the symbols @, $, %, © and ★ are used with the following meaning as illustrated below—

'P © Q' means 'P is not smaller than Q'.
'P ★ Q' means 'P is neither greater than nor equal to Q'.
'P $ Q' means 'P is not greater than Q'.
'P % Q' means 'P is neither greater than nor smaller than Q'.
'P @ Q' means 'P is neither smaller than nor equal to Q'.

6. **Statements :** F % I, I @ B, B © M, M $ K
Conclusions : I. K % B
II. K @ B
III. M ★ F
IV. B ★ F
(A) Only III and IV are true
(B) Only I and II are true
(C) Only II and III are true
(D) All are true
(E) None of these

7. **Statements :** K % M, M ★ N, N © R, R @ T
Conclusions : I. T ★ N
II. R $ M
III. N @ K
IV. N © K
(A) Only I and II are true
(B) Only I and III are true
(C) Only II and III are true
(D) Only III and IV are true
(E) None of these

8. **Statements :** H @ J, J ★ B, B $ N, N ★ V
Conclusions : I. B @ H
II. V @ B
III. J ★ V
IV. J ★ N
(A) Only I, II and III are true
(B) Only II, III and IV are true
(C) Only I, II and IV are true
(D) Only I, III and IV are true
(E) None of these

9. **Statements :** H $ F, F @ B, B © D, D % W
Conclusions : I. D ★ H
II. W $ B
III. H ★ B
IV. D ★ F
(A) Only I and III are true
(B) Only II and III are true
(C) Only II and IV are true
(D) All are true
(E) None of these

10. **Statements :** M © T, T % R, R @ F, H ★ F
Conclusions : I. H ★ R
II. R $ M
III. M @ F
IV. M @ H
(A) Only I, II and III are true
(B) Only II, III and IV are true
(C) Only I, II and IV are true
(D) Only I, III and IV are true
(E) All are true

11. **Statements :** B ★ D, D @ H, H % W, W © M
Conclusions : I. B @ W
II. D @ W
III. M $ H
IV. D @ M
(A) Only I, II and III are true
(B) Only I, II and IV are true
(C) Only I, III and IV are true
(D) Only II, III and IV are true
(E) All are true

Directions—(Q. 12–16) In these questions the symbols @, #, $, ★ and © are used with different meanings as follows—

'A@B' means 'A is smaller than B.'
'A#B' means 'A is either smaller than or equal to B.'
'A$B' means 'A is greater than B.'
'A★B' means 'A is either greater than or equal to B.
'A©B' means 'A is neither greater than nor smaller than B.'

In each question, three statements showing relationships have been given, which are followed by two conclusions I and II. Assuming that the given statements are true, find out which conclusion(s) is/are **definitely true.** Give the answer—

(A) If only conclusion I is true.
(B) If only conclusion II is true.
(C) If either conclusion I or conclusion II is true.
(D) If neither conclusion I nor conclusion II is true.
(E) If both conclusions I and II are true.

12. **Statements :** H#Q, Q@F, L$F
Conclusions : I. L$H
II. H#F

13. **Statements :** J$T, T@V, V#M
Conclusions : I. T#M
II. J©M

14. **Statements :** U#D, D@R, R©T
Conclusions : I. U@R
II. T$D

15. **Statements :** M★L, L$K, K@R
Conclusions : I. M★R
II. M@R

16. **Statements :** J@N, N©W, W$V
Conclusions : I. J©V
II. J@W

Directions—(Q. 17–21) In these questions, symbols @, #, %, $ and © are used with different meanings as follows—

'A @ B' means 'A is not smaller than B'.

'A # B' means 'A is neither smaller than nor equal to B'.

'A % B' means 'A is not greater than B'.

'A $ B' means 'A is neither greater than nor equal to B'.

'A © B' means 'A is neither smaller than nor greater than B'.

17. **Statements :** J # H, H © T, T $ R, R % F

Conclusions : I. J # R
II. R # F
III. J # T

(A) Only I is true (B) Only I and II are true
(C) Only III is true (D) All are true
(E) None of these

18. **Statements :** E $ P, P % H, H @ I, I # K

Conclusions : I. P © I
II. I % E
III. H % K

(A) Only I is true (B) Only II is true
(C) Only III is true (D) Only I and II are true
(E) None is true

19. **Statements :** L @ K, K # R, R $ H, H % N

Conclusions : I. L # R
II. N # R
III. L © N

(A) Only I and II are true
(B) Only either I or II is true
(C) Only II and III are true
(D) Only III is true
(E) None of these

20. **Statements :** T $ V, V % K, K © L, L % H

Conclusions : I. V % H
II. T $ L
III. T $ H

(A) Only I and II are true
(B) Only II and III are true
(C) Only I and III are true
(D) All are true
(E) None of these

21. **Statements :** V © W, W # D, D $ M, M % F

Conclusions : I. V # D
II. F # D
III. V © F

(A) Only I is true
(B) Only II is true
(C) Only either I or II is true
(D) Both I and II are true
(E) None of these

Directions—(Q. 22–27) In the following questions, the symbols @, δ, ★, $ and % are used with the following meaning as illustrated below—

'P δ Q' means 'P is not smaller than Q'.

'P ★ Q' means 'P is not greater than Q'.

'P % Q' means 'P is neither greater than nor equal to Q'.

'P $ Q' means 'P is neither smaller than nor equal to Q'.

'P @ Q' means 'P is neither greater than or smaller than Q'.

Now in each of the following questions assuming the given statements to be true, find which of the three conclusions I, II and III given below them is/are **definitely true** and give your answer accordingly.

22. **Statements :** B % N, N δ F, F ★ H

Conclusions : I. H $ N
II. F % B
III. B % H

(A) Only I and II are true
(B) Only I and III are true
(C) Only II and III are true
(D) None is true
(E) All I, II and III are true

23. **Statements :** W δ F, F % K, K $ M

Conclusions : I. M % F
II. M δ F
III. W $ K

(A) Only I is true
(B) Only II is true
(C) Only either I or II is true
(D) Only III is true
(E) None of these

24. **Statements :** W $ B, B @ M, M ★ R

Conclusions : I. R $ B
II. R @ B
III. M % W

(A) Only either I or II is true
(B) Only either I or II and III are true
(C) Only III is true
(D) All I, II and III are true
(E) None of these

25. **Statements :** M ★ D, D $ K, K @ T

Conclusions : I. T % D
II. K % M
III. M % T

(A) Only I is true (B) Only II is true
(C) Only III is true (D) Only I and III are true
(E) None of these

26. **Statements :** K @ F, F $ M, M δ T

Conclusions : I. T % F
II. M % K
III. K $ T

(A) Only I and II are true

(B) Only I and III are true

(C) Only II and III are true

(D) All I, II and III are true

(E) None of these

27. **Statements :** N ★ A, A % B, B δ D

Conclusions : I. D % A

II. B $ N

III. N % D

(A) None is true (B) Only I is true

(C) Only II is true (D) Only III is true

(E) Only I and II are true

Directions—(Q. 28–32) In these questions symbols @, #, $, % and © are used with different meanings as follows :

'A @ B' means 'A is smaller than B'.

'A # B' means 'A is greater than B'.

'A $ B' means 'A is either smaller than or equal to B'.

'A % B' means 'A is either greater than or equal to B'.

'A © B' means 'A is neither greater than nor smaller than B'.

In each question, three statements showing relationships have been given, which are followed by two conclusions I & II. Assuming that the given statements are true, find out which conclusion(s) is/are definitely true.

Mark Answer :

(A) If only conclusion I is true.

(B) If only conclusion II is true.

(C) If either conclusion I or II is true.

(D) If neither I nor II is true.

(E) If both conclusions I and II are true.

28. **Statements :** T # R, R % H, H @ F

Conclusions : I. H @ T

II. F © T

29. **Statements :** L $ K, K @ M, J % M

Conclusions : I. L @ M

II. K @ J

30. **Statements :** F © D, D # V, V @ P

Conclusions : I. F © P

II. V @ F

31. **Statements :** E $ W, W @ Q, Q % H

Conclusions : I. E $ Q

II. E © H

32. **Statements :** J © T, T # W, W % R

Conclusions : I. J # R

II. T % R

Directions—(Q. 33–38) In the following questions, the symbols ★, %, @, $ and © are used with the following meaning as illustrated below—

'P % Q' means 'P is smaller than Q'.

'P © Q' means 'P is either smaller than or equal to Q'.

'P ★ Q' means 'P is neither greater than nor smaller than Q'.

'P @ Q' means 'P is greater than Q'.

'P $ Q' means 'P is either greater than or equal to Q'.

Now in each of the following questions assuming the given statements to be true, find which of the two conclusions I and II given below them is/are **definitely true** ? Give answers :

(A) If only conclusion I is true.

(B) If only conclusion II is true.

(C) If either conclusion I or II is true.

(D) If neither conclusion I nor II is true.

(E) If both conclusions I and II are true.

33. **Statements :** M @ D, D © W, W ★ B

Conclusions : I. B $ D

II. M @ B

34. **Statements :** H ★ B, B $ A, A % R

Conclusions : I. R @ H

II. A © H

35. **Statements :** B $ D, D @ J, J % M

Conclusions : I. J % B

II. M @ D

36. **Statements :** R @ M, M ★ K, K © T

Conclusions : I. T @ M

II. T ★ M

37. **Statements :** J $ N, N % D, D @ F

Conclusions : I. F % N

II. J @ D

38. **Statements :** K % N, N ★ J, J © F

Conclusions : I. F $ N

II. J @ K

Directions—(Q. 39–43) In the following questions, the symbols @, ©, $, % and ★ are used with the following meaning as illustrated below—

'P © Q' means P is not smaller than Q

'P ★ Q' means P is not greater than Q

'P @ Q' means P is neither greater than nor smaller than Q

'P $ Q' means P is neither smaller than nor equal to Q

'P % Q' means P is neither greater than nor equal to Q

Now in each of the following questions assuming the given statements to be true, find which of the conclusions I, II, III and IV given below them is/are **definitely true** and give your answers accordingly.

39. **Statements :** K © L, L % O, O @ M, M ★ N

Conclusions : I. N © O

II. M $ L

III. K ★ N

IV. L @ N

(A) Only II is true (B) Only I and II are true

(C) Only I is true (D) Either I or II is true

(E) None is true

40. **Statements :** A ★ B, B $ C, C % D, D © E
Conclusions : I. D $ A
II. B $ D
III. E % C
IV. A @ E
(A) Only I is ture
(B) Only either I or II is true
(C) Only I and IV are true
(D) None is true
(E) Only IV is true

41. **Statements :** F $ P, P @ R, R © S, S % T
Conclusions : I. R % F
II. S ★ P
III. P © T
IV. S % F
(A) Only I, II and III are true
(B) Only I and II are true
(C) Only III and IV are true
(D) Only I, II and IV are true
(E) All are true

42. **Statements :** G % H, H ★ I, I $ J, J @ K
Conclusions : I. G % I
II. G % J
III. K $ I
IV. H ★ J
(A) Only I is true
(B) Only II is true
(C) Only I, II and III are true
(D) Only either I or II and III are true
(E) All are true

43. **Statements :** V @ W, W % X, X ★ Y, Y $ Z
Conclusions : I. Z $ X
II. Y © V
III. W % Y
IV. Y @ W
(A) Only I and III are true
(B) Only II is true
(C) Only III is true
(D) None is true
(E) Only III and IV are true

Directions—(Q. 44–51) In the following questions the symbols @, #, $, % and & are used with different meaning as follows—

'P @ Q' means 'P is neither smaller than nor equal to Q'.

'P # Q' means 'P is not greater than Q'.

'P $ Q' means 'P is not smaller than Q'.

'P % Q' means 'P is neither greater than nor smaller than Q'.

'P & Q' means 'P is neither greater than not equal to Q'.

In each of the following questions assuming the given statements to be true, find out which of the two conclusions I and II given below them is/are **definitely true**. Give answers :

(A) If only conclusion I is true.
(B) If only conclusion II is true.
(C) If either conclusion I or conclusion II is true.
(D) If neither conclusion I nor conclusion II is true.
(E) If both conclusions I and II are true.

44. D & T, R # T, R $ M
I. M & T II. M % T

45. E % H, H $ M, M # Q
I. H $ Q II. E $ M

46. F $ D, H # M, M % D
I. F $ H II. F @ H

47. G # H, H $ K, K @ M
I. M # G II. G & M

48. R & M, M # L, L $ Q
I. M % Q II. M @ Q

49. F # R, Q $ R, Q & M
I. F # Q II. R & M

50. S # A, S @ T, L & T
I. L & A II. S @ L

51. G $ J, J @ K, K % N
I. G @ N II. G % N

Answers with Explanations

1. (E) G @ H → G < H,
H ★ Q → H = Q
and Q $ M → Q ≤ M
∴ G < H = Q ≤ M
I M % G → M > G (True)
II. H $ M → H ≤ M (True)

2. (A) F ★ B → F = B,
B @ E → B < E
and E # J → E ≥ J
∴ F = B < E ≥ J
I F @ E → F < E (True)
II. J $ B → J ≤ B (False)

3. (D) R $ B → R ≤ H,
H % M → H > M
and M # F → M ≥ F
∴ R ≤ H > M ≥ F
I F $ H → F ≤ H (False)
II. F @ R → F < R (False)

4. (B) T # L → T ≥ L,
L % W → L > W
and W @ V → W < V
∴ T ≥ L > W < V
I L % V → L > V (False)
II. T % W → T > W (True)

5. (C) $K \% L \rightarrow K > L$,
$L \# T \rightarrow L \geq T$
and $I \$ T \rightarrow I \leq T$
$\therefore K > L \geq T \geq I$
I $L \% I \rightarrow L > I$
II. $L \star I \rightarrow L = I$
Any one is true.

6. (A) $F \% I \rightarrow F = I$,
$I @ B \rightarrow I > B$,
$B \copyright M \rightarrow B \geq M$
and $M \$ K \rightarrow M \leq K$
$\therefore F = I > B \geq M \leq K$
I. $K \% B \rightarrow K = B$ (False)
II. $K @ B \rightarrow K > B$ (False)
III. $M \star F \rightarrow M < F$ (True)
IV. $B \star F \rightarrow B < F$ (True)

7. (B) $K \% M \rightarrow K = M$,
$M \star N \rightarrow M < N$,
$N \copyright R \rightarrow N \geq R$
and $R @ T \rightarrow R > T$
$\therefore K = M < N \geq R > T$
I. $T \star N \rightarrow T < N$ (True)
II. $R \$ M \rightarrow R \leq M$ (False)
III. $N @ K \rightarrow N > K$ (True)
IV. $N \copyright K \rightarrow N \geq K$ (False)

8. (B) $H @ J \rightarrow H > J$,
$J \star B \rightarrow J < B$,
$B \$ N \rightarrow B \leq N$
and $N \star V \rightarrow N < V$
$\therefore H > J < B \leq N < V$
I. $B @ H \rightarrow B > H$ (False)
II. $V @ B \rightarrow V > B$ (True)
III. $J \star V \rightarrow J < B$ (True)
IV. $J \star N \rightarrow J < N$ (True)

9. (C) $H \$ F \rightarrow H \leq F$,
$F @ B \rightarrow F > B$,
$B \copyright D \rightarrow B \geq D$
and $D \% W \rightarrow D = W$
$\therefore H \leq F > B \geq D = W$
I. $D \star H \rightarrow D < H$ (False)
II. $W \$ B \rightarrow W \leq B$ (True)
III. $H \star B \rightarrow H < B$ (False)
IV. $D \star F \rightarrow D < F$ (True)

10. (E) $M \copyright T \rightarrow M \geq T$,
$T \% R \rightarrow T = R$,
$R @ F \rightarrow R > F$
and $H \star F \rightarrow H < F$
$\therefore M \geq T = R > F > H$
I. $H \star R \rightarrow H < R$ (True)
II. $R \$ M \rightarrow R \leq M$ (True)
III. $M @ F \rightarrow M > F$ (True)
IV. $M @ H \rightarrow M > H$ (True)

11. (D) $B \star D \rightarrow B < D$,
$D @ H \rightarrow D > H$,
$H \% W \rightarrow H = W$
and $W \copyright M \rightarrow W \geq M$
$\therefore B < D > H = W \geq M$
I. $B @ W \rightarrow B > W$ (False)
II. $D @ W \rightarrow D > W$ (True)
III. $M \$ H \rightarrow M \leq H$ (True)
IV. $D @ M \rightarrow D > M$ (True)

12. (A) $H \# Q \rightarrow H \leq Q$,
$Q @ F \rightarrow Q < F$
and $L \$ F \rightarrow L > F$
$\therefore H \leq Q < F < L$
I. $L \$ H \rightarrow L > H$ (True)
II. $H \# F \rightarrow H \leq F$ (False)

13. (D) $J \$ T \rightarrow J > T$,
$T @ V \rightarrow T < V$
and $V \# M \rightarrow V \leq M$
$\therefore J > T < V \leq M$
I. $T \# M \rightarrow T \leq M$ (False)
II. $J \copyright M \rightarrow J = M$ (False)

14. (E) $U \# D \rightarrow U \leq D$,
$D @ R \rightarrow D < R$
and $R \copyright T \rightarrow R = T$
$\therefore U \leq D < R = T$
I. $U @ R \rightarrow U < R$ (True)
II. $T \$ D \rightarrow T > D$ (True)

15. (D) $M \star L \rightarrow M \geq L$
$L \$ K \rightarrow L > K$
and $K @ R \rightarrow K < R$
$\therefore M \geq L > K < R$
I. $M \star R \rightarrow M \geq R$ (False)
II. $M @ R \rightarrow M < R$ (False)

16. (B) $J @ N \rightarrow J < N$
$N \copyright W \rightarrow N = W$
and $W \$ V \rightarrow W > V$
$\therefore J < N = W > V$
I. $J \copyright W \rightarrow J = V$ (False)
II. $J @ W \rightarrow J < W$ (True)

17. (C) $J \# H \rightarrow J > H$,
$H \copyright T \rightarrow H = T$,
$T \$ R \rightarrow T < R$
and $R \% F \rightarrow R \leq F$
$\therefore J > H = T < R \leq F$
I. $J \# R \rightarrow J > R$ (False)
II. $R \# F \rightarrow R > F$ (False)
III. $J \# T \rightarrow J > T$ (True)

18. (E) $E \$ P \rightarrow E < P$,
$P \% H \rightarrow P \leq H$,
$H @ I \rightarrow H \geq I$
and $I \# K \rightarrow I > K$
$\therefore E < P \leq H \geq I > K$
I. $P \copyright I \rightarrow P = I$ (False)
II. $I \% E \rightarrow I \leq E$ (False)
III. $H \% K \rightarrow H \leq K$ (False)

19. (A) $L @ K \rightarrow L \geq K$,
$K \# R \rightarrow K > R$,
$R \$ H \rightarrow R < H$
and $H \% N \rightarrow H \leq N$
$\therefore L \geq K > R < H \leq N$
I. $L \# R \rightarrow L > R$ (True)
II. $N \# R \rightarrow N > R$ (True)
III. $L © N \rightarrow L = N$ (False)

20. (D) $T \$ V \rightarrow T < V$,
$V \% K \rightarrow V \leq K$,
$K © L \rightarrow K = L$
and $L \% H \rightarrow L \leq H$
$\therefore T < V \leq K = L \leq H$
I. $V \% H \rightarrow V \leq H$ (True)
II. $T \$ L \rightarrow T < L$ (True)
III. $T \$ H \rightarrow T < H$ (True)

21. (D) $V @ W \rightarrow V \geq W$,
$W \# D \rightarrow W > D$,
$D \$ M \rightarrow D < M$
and $M \% F \rightarrow M \leq F$
$\therefore V \geq W > D < M \leq F$
I. $V \# D \rightarrow V > D$ (True)
II. $F \# D \rightarrow F > D$ (True)
III. $V © F \rightarrow V = F$ (False)

22. (D) $B \% N \Rightarrow B < N$
$N \delta F \Rightarrow N \geq F$
and $F \star H \Rightarrow F \leq H$
$\therefore B < N \geq F \leq H$
I. $H \$ N \Rightarrow H > N$ (False)
II. $F \% B \Rightarrow F < B$ (False)
III. $B \% H \Rightarrow B < H$ (False)

23. (E) $W \delta F \Rightarrow W \geq F$
$F \% K \Rightarrow F < K$
and $K \$ M \Rightarrow K > M$
$\therefore W \geq F < K > M$
I. $M \% F \Rightarrow M < F$ (False)
II. $M \delta F \Rightarrow M \geq F$ (False)
III. $W \$ K \Rightarrow W > K$ (False)

24. (B) $W \$ B \Rightarrow W > B$
$B @ M \Rightarrow B = M$
and $M \star R \Rightarrow M \leq R$
$\therefore W > B = M \leq R$
I. $R \$ B \Rightarrow R > B$
II. $R @ B \Rightarrow R = B$
} Either I or II is true
III. $M \% W \Rightarrow M < W$ (True)

25. (A) $M \star D \Rightarrow M \leq D$
$D \$ K \Rightarrow D > K$
and $K @ T \Rightarrow K = T$
$\therefore M \leq D > K = T$
I. $T \% D \Rightarrow T < D$ (True)
II . $K \% M \Rightarrow K < M$ (False)
III. $M \% T \Rightarrow M < T$ (False)

26. (D) $K @ F \Rightarrow K = F$
$F \$ M \Rightarrow F > M$
and $M \delta T \Rightarrow M \geq T$
$\therefore K = F > M \geq T$
I. $T \% F \Rightarrow T < F$ (True)
II. $M \% K \Rightarrow M < K$ (True)
III. $K \$ T \Rightarrow K > T$ (True)

27. (C) $N \star A \Rightarrow N \leq A$
$A \% B \Rightarrow A < B$
and $B \delta D \Rightarrow B \geq D$
$\therefore N \leq A < B \geq D$
I. $D \% A \Rightarrow D < A$ (False)
II. $B \$ N \Rightarrow B > N$ (True)
III. $N \% D \Rightarrow N < D$ (False)

28. (A) $T \# R \rightarrow T > R$,
$R \% H \rightarrow R \geq H$
and $H @ F \rightarrow H < F$
$\therefore T > R \geq H < F$
I. $H @ T \rightarrow H < T$ (True)
II. $F © T \rightarrow F = T$ (False)

29. (E) $L \$ K \rightarrow L \leq K$,
$K @ M \rightarrow K < M$
and $J \% M \rightarrow J \geq M$
$\therefore L \leq K < M \leq J$
I. $L @ M \rightarrow L < M$ (True)
II. $K @ J \rightarrow K < J$ (True)

30. (B) $F © D \rightarrow F = D$,
$D \# V \rightarrow D > V$
and $V @ P \rightarrow V < P$
$\therefore F = D > V < P$
I. $F © P \rightarrow F = P$ (False)
II. $V @ F \rightarrow V < F$ (True)

31. (D) $E \$ W \rightarrow E \leq W$,
$W @ Q \rightarrow W < Q$
and $Q \% H \rightarrow Q \geq H$
$\therefore E \leq W < Q \geq H$
I. $E \$ Q \rightarrow E \leq Q$ (False)
II. $E © H \rightarrow E = H$ (False)

32. (A) $J © T \rightarrow J = T$,
$T \# W \rightarrow T > W$
and $W \% R \rightarrow W \geq R$
$\therefore J = T > W \geq R$
I. $J \# R \rightarrow J > R$ (True)
II. $T \% R \rightarrow T \geq R$ (False)

33. (A) $M @ D \Rightarrow M > D$
$D © W \Rightarrow D \leq W$
and $W \star B \Rightarrow W = B$
$\therefore M > D \leq W = B$
I. $B \$ D \Rightarrow B \geq D$ (True)
II. $M @ B \Rightarrow M > B$ (False)

34. (B) $H \star B \Rightarrow H = B$
$B \$ A \Rightarrow B \geq A$
and $A \% R \Rightarrow A < R$
$\therefore H = B \geq A < R$
I. $R @ H \Rightarrow R > H$ (False)
II. $A © H \Rightarrow A \leq H$ (True)

35. (A) $B \$ D \Rightarrow B \geq D$
$D @ J \Rightarrow D > J$
and $J \% M \Rightarrow J < M$
$\therefore B \geq D > J < M$

I. $J \% B \Rightarrow J < B$ (True)
II. $M @ D \Rightarrow M > D$ (False)

36. (C) $R @ M \Rightarrow R > M$
$M \bigstar K \Rightarrow M = K$
and $K © T \Rightarrow K \leq T$
$\therefore R > M = K \leq T$
I. $T @ M \Rightarrow T > M$
II. $T \bigstar M \Rightarrow T = M$
} Either I or II is true

37. (D) $J \$ N \Rightarrow J \geq N$
$N \% D \Rightarrow N < D$
and $D @ F \Rightarrow D > F$
$\therefore J \geq N < D > F$
I. $F \% N \Rightarrow F < N$ (False)
II. $J @ D \Rightarrow J > D$ (False)

38. (E) $K \% N \Rightarrow K < N$
$N \bigstar J \Rightarrow N = J$
and $J © F \Rightarrow J \leq F$
$\therefore K < N = J \leq F$
I. $F \$ N \Rightarrow F \geq N$ (True)
II. $J @ K \Rightarrow J > K$ (True)

39. (B) $K © L \Rightarrow K \geq L$
$L \% O \Rightarrow L < O$
$O @ M \Rightarrow O = M$
and $M \bigstar N \Rightarrow M \leq N$
$\therefore K \geq L < O = M \leq N$
I. $N © O \Rightarrow N \geq O$ (True)
II. $M \$ L \Rightarrow M > L$ (True)
III. $K \bigstar N \Rightarrow K \leq N$ (False)
IV. $L @ N \Rightarrow L = N$ (False)

40. (D) $A \bigstar B \Rightarrow A \leq B$
$B \$ C \Rightarrow B > C$
$C \% D \Rightarrow C < D$
and $D © E \Rightarrow D \geq E$
$\therefore A \leq B > C < D \geq E$
I. $D \$ A \Rightarrow D > A$ (False)
II. $B \$ D \Rightarrow B > D$ (False)
III. $E \% C \Rightarrow E < C$ (False)
IV. $A @ E \Rightarrow A = E$ (False)

41. (D) $F \$ P \Rightarrow F > P$
$P @ R \Rightarrow P = R$
$R © S \Rightarrow R \geq S$
and $S \% T \Rightarrow S < T$
$\therefore F > P = R \geq S < T$
I. $R \% F \Rightarrow R < F$ (True)
II. $S \bigstar P \Rightarrow S \leq P$ (True)
III. $P © T \Rightarrow P \geq T$ (False)
IV. $S \% F \Rightarrow S < F$ (True)

42. (A) $G \% H \Rightarrow G < H$
$H \bigstar I \Rightarrow H \leq I$
$I \$ J \Rightarrow I > J$
and $J @ K \Rightarrow J = K$
$\therefore G < H \leq I > J = K$
I. $G \% I \Rightarrow G < I$ (True)
II. $G \% J \Rightarrow G < J$ (False)
III. $K \$ I \Rightarrow K > I$ (False)
IV. $H \bigstar J \Rightarrow H \leq J$ (False)

43. (C) $V @ W \Rightarrow V = W$
$W \% X \Rightarrow W < X$
$X \bigstar Y \Rightarrow X \leq Y$
and $Y \$ Z \Rightarrow Y > Z$
$\therefore V = W < X \leq Y > Z$
I. $Z \$ X \Rightarrow Z > X$ (False)
II. $Y © V \Rightarrow Y \geq V$ (False)
III. $W \% Y \Rightarrow W < Y$ (True)
IV. $Y @ W \Rightarrow Y = W$ (False)

44. (C) $D \& T \Rightarrow D < T$
$R \# T \Rightarrow R \leq T$
and $R \$ M \Rightarrow R \geq M$
$\therefore D < T \geq R \geq M$
I. $M \& T \Rightarrow M < T$
II. $M \% T \Rightarrow M = T$
$\therefore$ Either I or II is true.

45. (B) $E \% H \Rightarrow E = H$
$H \$ M \Rightarrow H \geq M$
and $M \# Q \Rightarrow M \leq Q$
$\therefore E = H \geq M \leq Q$
I. $H \$ Q \Rightarrow H \leq Q$ (False)
II. $E \$ M \Rightarrow E \geq M$ (True)

46. (A) $F \$ D \Rightarrow F \geq D$
$H \# M \Rightarrow H \leq M$
and $M \% D \Rightarrow M = D$
$\therefore F \geq D = M \geq H$
I. $F \$ H \Rightarrow F \geq H$ (True)
II. $F @ H \Rightarrow F > H$ (False)

47. (D) $G \# H \Rightarrow G \leq H$
$H \$ K \Rightarrow H \geq K$
and $K @ M \Rightarrow K > M$
$\therefore G \leq H \geq K > M$
I. $M \# G \Rightarrow M \leq G$ (False)
II. $G \& M \Rightarrow G < M$ (False)

48. (D) $R \& M \Rightarrow R < M$
$M \# L \Rightarrow M \leq L$
and $L \$ Q \Rightarrow L \geq Q$
$\therefore R < M \leq L \geq Q$
I. $M \% Q \Rightarrow M = Q$ (False)
II. $M @ Q \Rightarrow M > Q$ (False)

49. (E) $F \# R \Rightarrow F \leq R$
$Q \$ R \Rightarrow Q \geq R$
and $Q \& M \Rightarrow Q < M$
$\therefore F \leq R \leq Q < M$
I. $F \# Q \Rightarrow F \leq Q$ (True)
II. $R \& M \Rightarrow R < M$ (True)

50. (E) $S \# A \Rightarrow S \leq A$
$S @ T \Rightarrow S > T$
and $L \& T \Rightarrow L < T$
$\therefore L < T < S \leq A$
I. $L \& A \Rightarrow L < A$ (True)
II. $S @ L \Rightarrow S > L$ (True)

51. (A) $G \$ J \Rightarrow G \geq J$
$J @ K \Rightarrow J > K$
and $K \% N \Rightarrow K = N$
$\therefore G \geq J > K = N$
I. $G @ N \Rightarrow G > N$ (True)
II. $G \% N \Rightarrow G = N$ (False)

Sequencial Output Tracing

In such type of questions, a message comprising randomised words or numbers is given as the input. This is followed by steps of rearrangement to sequential outputs substance-wise. This type of test is not very tough. But usually the questions which are asked, take a good deal of time before they could be solved. The candidate is required to trace out the pattern in the given rearrangement and then determine the designed output step, according as is asked in the questions. Generally the questions in input-output could be of any of four types : shifting, arranging, arithmetical operations and miscellaneous. But it would not be mentioned in the questions itself that it is about shifting or arranging or something else.

Example—(Q. 1–5) Study the following information and answer the questions given below it—

An electronic device when fed with the numbers, rearrange them in a particular order following certain rules. The following is a step-by-step process of rearrangement for the given input of numbers.

Input	85	16	36	04	19	97	63	09
Step I	97	85	16	36	04	19	63	09
Step II	97	85	63	16	36	04	19	09
Step III	97	85	63	36	16	04	19	09
Step IV	97	85	63	36	19	16	04	09
Step V	97	85	63	36	19	16	09	04

(For the given input Step V is the last step)

1. Which of the following will be step V for the given input ?

Input : 25 08 35 11 88 67 23

(A) 88 67 35 25 23 11 08
(B) 88 67 35 25 08 11 23
(C) 08 11 23 25 35 67 88
(D) 88 67 35 25 23 08 11
(E) None of these

2. Which of the following will be step III for the given output ?

Input : 09 25 16 30 32 19 17 06

(A) 32 09 25 16 30 19 17 06
(B) 32 30 09 25 16 19 17 06
(C) 32 30 25 09 16 19 17 06
(D) 32 25 09 16 30 19 17 06
(E) None of these

3. Which of the following will be last step of given input ?

Input : 16 09 25 27 06 05

(A) I (B) II
(C) III (D) IV
(E) None of these

4. Which of the following will be last step for the given input ?

Input : 03 31 43 22 11 09

(A) IV (B) V
(C) VI (D) Cannot be determined
(E) None of these

5. If the Step IV is given below, which of the following was the input ?

Step IV : 92 86 71 69 15 19 06 63 58

(A) 86 92 69 71 15 19 06 63 53
(B) 15 86 19 92 06 69 63 58 71
(C) 15 19 06 63 58 86 92 69 71
(D) Cannot be determined
(E) None of these

Answer with Explanation : It has been observed in the given arrangement that the numbers have been arranged in decending order in a sequence, altering the position of only one number in each step.

1. (A)

Input	25	08	35	11	88	67	23
Step I	88	25	08	35	11	67	23
Step II	88	67	25	08	35	11	23
Step III	88	67	35	25	08	11	23
Step IV	88	67	35	25	23	08	11
Step V	88	67	35	25	23	11	08

2. (C)

Input	09	25	16	30	32	19	17	06
Step I	32	09	25	16	30	19	17	06
Step II	32	30	09	25	16	19	17	06
Step III	32	30	25	09	16	19	17	06

3. (B)

Input	16	09	25	27	06	05
Step I	27	16	09	25	06	05
Step II	27	25	16	09	06	05

Since, all the remaining numbers in the given input have already been arranged in descending order. So, it is the last step.

4. (B)

Input	03	31	43	22	11	09
Step I	43	03	31	22	11	09
Step II	43	31	03	22	11	09
Step III	43	31	22	03	11	09
Step IV	43	31	22	11	03	09
Step V	43	31	22	11	09	03

5. (C)

Input	15	19	06	63	58	86	92	69	71
Step I	92	15	19	06	63	58	86	69	71
Step II	92	86	15	19	06	63	58	69	71
Step III	92	86	71	15	19	06	63	58	69
Step IV	92	86	71	69	15	19	06	63	58

Exercise

Directions—(Q. 1–8) Study the following information carefully and answer the given questions :

A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input : 51 pour 32 start now 23 46 house
Step I : 23 51 pour 32 start now 46 house
Step II : 23 start 51 pour 32 now 46 house
Step III : 23 start 32 51 pour now 46 house
Step IV : 23 start 32 pour 51 now 46 house
Step V : 23 start 32 pour 46 51 now house
Step VI : 23 start 32 pour 46 now 51 house

and step VI is the last step of the rearrangement.

As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

1. **Step II of an input is :** 18 task bear cold dish 81 63 31
How many more steps will be required to complete the rearrangement ?
(A) Three (B) Four
(C) Five (D) Six
(E) None of these

2. **Input :** 72 59 37 go for picnic 24 journey
How many steps will take to complete the rearrangement ?
(A) Three (B) Four
(C) Five (D) Six
(E) None of these

3. **Input :** nice flower 34 12 costly height 41 56
Which of the following will be step III ?
(A) 12 nice 34 height flower costly 41 56
(B) 12 nice 34 height 41 flower costly 56
(C) 12 nice 34 flower costly height 41 56
(D) 12 nice flower 34 costly height 41 56
(E) None of these

4. **Step II of an input is :** 16 victory 19 36 53 store lake town
Which of the following will be step V ?
(A) 16 victory 19 town store 36 53 lake
(B) 16 victory 19 town 36 store 53 lake
(C) 16 victory 19 town 36 53 store lake
(D) There will be no such step
(E) None of these

5. **Step III of an input is :** 15 yes 29 ask for soap 42 37
Which of the following is definitely the input ?
(A) ask yes 29 15 for soap 42 37
(B) yes ask 15 29 for soap 42 37
(C) 29 15 yes ask for soap 42 37
(D) Cannot be determined
(E) None of these

6. **Input :** milk pot 18 24 over goal 36 53
Which of the following steps will be the last but one ?
(A) VI (B) V
(C) VII (D) VIII
(E) None of these

7. **Step III of an input is :** 36 win 44 95 86 ultra box queen
How many more steps will be required to complete the rearrangement ?
(A) Three (B) Four
(C) Five (D) Six
(E) None of these

8. **Input :** New 22 model 27 pump 38 11 join
How many steps will be required to complete the rearrangement ?
(A) Four (B) Five
(C) Six (D) Seven
(E) None of these

Directions—(Q. 9–13) Given an input line the machine arranges the words and numbers in steps in a systematic manner as illustrated below :

Input line : 56 dress fine shine 32 66 72 offer
Step I : 72 56 dress fine shine 32 66 offer
Step II : 72 shine 56 dress fine 32 66 offer
Step III : 72 shine 66 56 dress fine 32 offer
Step IV : 72 shine 66 offer 56 dress fine 32
Step V : 72 shine 66 offer 56 fine dress 32
Step VI : 72 shine 66 offer 56 fine 32 dress

Step VI is the last step and the output in Step VI is the final output.

As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

9. Step IV of an input is '62 sound 56 sleep roam present 33 49'. What will be the input definitely ?
(A) Sound 62 sleep 56 roam present 33 49
(B) Sleep sound 62 56 roam present 33 49
(C) 62 sound sleep 56 roam present 33 49
(D) Cannot be determined
(E) None of these

10. Which of the following will be the third step for input : 'jockey firm 36 43 growth chart 22 45' ?
(A) 45 jockey 43 growth firm 36 chart 22
(B) 45 jockey 43 firm growth 36 chart 22
(C) 45 jockey 43 growth 36 firm chart 22
(D) 45 jockey 43 firm 36 growth chart 22
(E) None of these

11. Step II of an input is '53 window 42 50 door lock key 36'. How many more steps will be required to complete the arrangement ?
(A) Three (B) Four
(C) Five (D) Six
(E) None of these

12. What will be the fifth step of an input whose first step is '85 journey train 36 54 daily 28 mansion' ?
(A) 85 train 54 mansion 28 journey daily 36
(B) 85 train 54 mansion journey 36 daily 28
(C) 85 train 54 mansion 36 journey daily 28
(D) There is no such step
(E) None of these

13. Which step will be the last step for an input whose second step is '63 Sour 18 56 grapes healthy 32 rise' ?
(A) IV (B) V
(C) VIII (D) VII
(E) None of these

Directions—(Q. 14–18) A coding machine generates pass codes in steps. The process begins at 10 a.m. and each step is an hour in duration. There is a rest period of an hour at 2 p.m. after which the duration of each step is 45 minutes.

Input : trucks 49 carry 36 massive 25 load 16
Step I : carry trucks 49 36 massive 25 load 16
Step II : carry 16 trucks 49 36 massive 25 load
Step III : carry 16 load trucks 49 36 massive 25
Step IV : carry 16 load 25 trucks 49 36 massive
Step V : carry 16 load 25 massive trucks 49 36
Step VI : carry 16 load 25 massive 36 trucks 49
Step VI is the last step for the above input.

Now answer the following questions, following the same rules as illustrated above for rearrangement of the input line.

14. If the third step of the input is 'is 4 material 36 test 16 packed 64' which of the following will be the fifth step ?
(A) is 4 material 16 packed 64 test 36
(B) is 4 material 16 packed 36 test 64
(C) is 4 material 16 test 36 packed 64
(D) There are only four steps
(E) None of these

15. If the input is 'the 36 issue 49 became 9 serious 25' how many steps will be required to complete the rearrangement ?
(A) Three (B) Four
(C) Five (D) Six
(E) None of these

16. How long excluding the rest period will it take to rearrange the input—
'you 49 visited 81 their 16 relative 25' ?
(A) 5 hours 45 minutes (B) 5 hours
(C) 5 hours 30 minutes (D) 4 hours 45 minutes
(E) None of these

17. What will be the input if the fourth step of the arrangement is—
'most 16 people 25 similarly 81 think 36' ?
(A) most 25 people 16 similarly 81 think 25
(B) most 25 people 16 think 81 similarly 36
(C) most 16 people 25 think 36 similarly 81
(D) Cannot be determined
(E) None of these

18. What will be the third step of the input—
'ministers 25 solved 36 their 81 problems 64' ?
(A) ministers 25 problems 36 solved 81 their 64
(B) ministers 25 problems 36 solved 64 their 81
(C) ministers 25 problems 36 their 81 solved 64
(D) ministers 25 solved 36 problems 81 their 64
(E) None of these

Directions—(Q. 19–23) Given an input, a coding machine generates pass-codes for six batches everyday as follows—

Input : the shopkeeper offered discount to customers
Pass-code for :
Batch I customer the shopkeeper offered discount to
Batch II customer discount the shopkeeper offered to
Batch III customer discount offered the shopkeeper to
and so on until the arrangement is completed.

After the arrangement is completed the next batch gets the same code as that for Batch I.

Duration of each batch is 1 hour. There is a break of one hour after the fourth batch. Sixth batch is the last batch. Now answer the following questions—

19. If the pass-code for the second batch is "do lean window out of not", what will be the pass-code for the fourth batch ?
(A) do lean of not out window
(B) do lean of out not window
(C) do lean not out window of
(D) do lean not of window out
(E) None of these

20. If the input is—
"please do not delay the matter",
what will be the pass-code for third batch ?
(A) do please not delay the matter
(B) delay do matter please not the
(C) delay do matter not please the
(D) delay do matter not the please
(E) None of these

21. If the pass-code for third batch is "brisk every for morning go walk", what will definitely be the input ?
(A) morning brisk go walk for every
(B) morning go brisk walk for every
(C) morning go walk brisk for every
(D) Cannot be determined
(E) None of these

22. If the pass-code for the second batch is "children for not is good watching television", what will be the pass-code for the fifth batch ?
(A) children for good not is watching television
(B) children for good is not watching television
(C) children good for is not television watching

(D) Cannot be determined
(E) None of these

23. If the input is "necessary arrangements have already been made", how many batches are required to complete the arrangement ?
(A) Three (B) Four
(C) Five (D) Six
(E) None of these

Answers with Explanations

1. (C) **Step II** : 18 task bear cold dish 81 63 31
Step III : 18 task 31 bear cold dish 81 63
Step IV : 18 task 31 dish bear cold 81 63
Step V : 18 task 31 dish 63 bear cold 81
Step VI : 18 task 31 dish 63 cold bear 81
Step VII : 18 task 31 dish 63 cold 81 bear
Hence, 5 more steps will be required to complete the rearrangement.

2. (D) **Input** : 72 59 37 go for picnic 24 journey
Step I : 24 72 59 37 go for picnic journey
Step II : 24 picnic 72 59 37 go for journey
Step III : 24 picnic 37 72 59 go for journey
Step IV : 24 picnic 37 journey 72 59 go for
Step V : 24 picnic 37 journey 59 72 go for
Step VI : 24 picnic 37 journey 59 go 72 for
Hence, VI steps will be required to complete the rearrangement.

3. (A) **Input** : nice flower 34 12 costly height 41 56.
Step I : 12 nice flower 34 costly height 41 56.
Step II : 12 nice 34 flower costly height 41 56.
Step III : 12 nice 34 height flower costly 41 56

4. (D) **Step II** : 16 victory 19 36 53 store lake town
Step III : 16 victory 19 town 36 53 store lake
Step IV : 16 victory 19 town 36 store 53 lake
There is no V step.

5. (D)

6. (B) **Input** : milk pot 18 24 over goal 36 53
Step I : 18 milk pot 24 over goal 36 53
Step II : 18 pot milk 24 over goal 36 53
Step III : 18 pot 24 milk over goal 36 53
Step IV : 18 pot 24 over milk goal 36 53
Step V : 18 pot 24 over 36 milk goal 53
Step VI : 18 pot 24 over 36 milk 53 goal
The last step is VI.
Hence, the prelast step is V.

7. (A) **Step III** : 36 win 44 95 86 ultra box queen
Step IV : 36 win 44 ultra 95 86 box queen
Step V : 36 win 44 ultra 86 95 box queen
Step VI : 36 win 44 ultra 86 queen 95 box.
Hence, 3 more steps will be required to complete the rearrangement.

8. (A) **Input** : new 22 model 27 pump 38 11 join.
Step I : 11 new 22 model 27 pump 38 join.
Step II : 11 pump new 22 model 27 38 join.
Step III : 11 pump 22 new model 27 38 join.
Step IV : 11 pump 22 new 27 model 38 join.
Hence, four steps will be required to complete the rearrangement.

9. (D)

10. (A) **Input** : jockey firm 36, 43 growth chart 22, 45.
Step I : 45 jockey firm 36 43 growth chart 22.
Step II : 45 jockey 43 firm 36 growth chart 22.
Step III : 45 jockey 43 growth firm 36 chart 22.

11. (B) **Step III** : 53 window 50 42 door lock key 36
Step IV : 53 window 50 lock 42 door key 36.
Step V : 53 window 50 lock 42 key door 36.
Step VI : 53 window 50 lock 42 key 36 door.

12. (C) **Step II** : 85 train journey 36 54 daily 28 mansion.
Step III : 85 train 54 journey 36 daily 28 mansion.
Step IV : 85 train 54 mansion journey 36 daily 28.
Step V : 85 train 54 mansion 36 journey daily 28.

13. (E) **Step III** : 63 sour 56 18 grapes healthy 32 rise.
Step IV : 63 sour 56 rise 18 grapes healthy 32.
Step V : 63 sour 56 rise 32 18 grapes healthy.
Step VI : 63 sour 56 rise 32 healthy 18 grapes.
The last step is VI.

14. (B) **Step III** : "is 4 material 36 test 16 packed 64"
Step IV : "is 4 material 16 36 test packed 64"
Step V : "is 4 material 16 packed 36 test 64"

15. (D) **Input** : "the 36 issue 49 became 9 serious 25"
Step I : "became the 36 issue 49 9 serious 25"
Step II : "became 9 the 36 issue 49 serious 25"
Step III : "became 9 issue the 36 49 serious 25"
Step IV : "became 9 issue 25 the 36 49 serious"
Step V : "became 9 issue 25 serious the 36 49"
Step VI : "became 9 issue 25 serious 36 the 49"
This is the last step.

16. (C) **Input** : "you 49 visited 81 their 16 relative 25"
Step I : "relative you 49 visited 81 their 16 25"
Step II : "relative 16 you 49 visited 81 their 25"

Step III : "relative 16 their you 49 visited 81 25"
Step IV : "relative 16 their 25 you 49 visited 81"
Step V : "relative 16 their 25 visited you 49 81"
Step VI : "relative 16 their 25 visited 49 you 81"

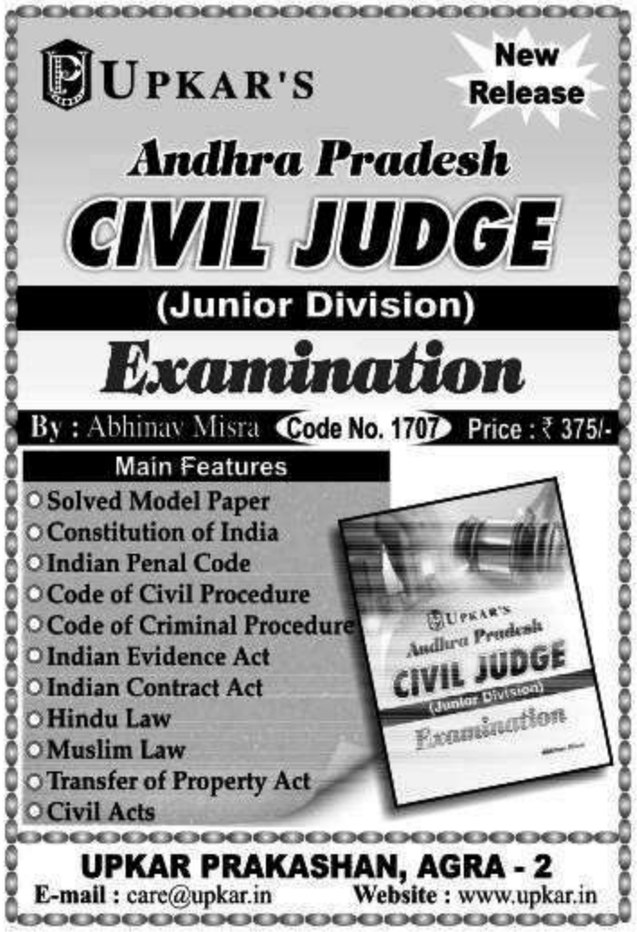
∴ Total time taken
= 1 hr. + 1 hr. + 1 hr. + 1 hr. + 45 min. + 45 min.
= 5 hours 30 minutes

17. (D)
18. (B) **Input :** "ministers 25 solved 36 their 81 problems 64"
Step I : "ministers 25 problems solved 36 their 81 64"
Step II : "ministers 25 problems 36 solved their 81 64"
Step III : "ministers 25 problems 36 solved 64 their 81"
19. (D) **Batch II :** do lean window out of not.
Batch III : do lean not window out of.
Batch IV : do lean not of window out.
20. (B) **Input :** please do not delay the matter.
Batch I : delay please do not the matter.
Batch II : delay do please not the matter.
Batch III : delay do matter please not the.
21. (D)
22. (E) **Batch II :** children for not is good watching television.
Batch III : children for good not is watching television.
Batch IV : children for good is not watching television.
Batch V : children for good is not television watching.
23. (C) **Input :** necessary arrangements have already been made.
Batch I : already necessary arrangements have been made.
Batch II : already arrangements necessary have been made.
Batch III : already arrangements been necessary have made.
Batch IV: already arrangements been have necessary made.
Batch V : already arrangements been have made necessary.

Batch V is the last batch.

Continued from Page 103

38. (B) Earth is called Jupiter. Hence man lives in Jupiter.
39. (B) Maternal grandfather is called maternal uncle. Hence the father of the mother is maternal uncle.
40. (C) Computer is called ox. Hence calculation with high speed is done by ox.
41. (A) God is called noble. Hence noble is worshiped by man.
42. (B) Pakistan is called India. Hence Islamabad is the capital of India.
43. (D) Dog is called rat. Hence rat watches our house.
44. (D) Paste is called fire. Hence fire is made by Colgate company.
45. (B) Circle is called square. Hence πr^2 is the area of square.
46. (E) Almirah is called bench. Hence the clothes are kept in bench.
47. (C) Brick is called sand. Hence brick is made by breaking stones.
48. (C) Flour is called vegetable. Hence vegetable is made from wheat.
49. (A) Curd is called butter. Hence butter is made by adding rennet to milk.
50. (C) Flower is called rose. Hence rose is offered to god.
51. (E) The colour of human blood is red and red is called violet. Hence, the colour of human blood is violet.
52. (C) The colour of sky is blue and blue is called yellow. Hence the colour of sky is yellow.
53. (C)
54. (B) The colour of grass is green and green is called black. Hence the colour of grass is black.
55. (E) Since Earth is classified under 'Planet' and 'Planet' is called Satellite. Hence, Earth is classified under 'Satellite'.
56. (A) Badminton is not played using a ball and Badminton is called Volleyball. Hence, required game is Volleyball.
57. (C) The colour of blood is red and red is called pink. Hence the colour of blood is pink.



Date Calendar and Clock

Important Points to be Remembered about Calendar

1. A year divisible by 4 is a leap year.
2. In case of century, a leap year is that which is divisible by 400.
3. There are 365 days in an ordinary year, so there are 52 weeks + 1 day. Hence, an ordinary year contains 1 odd day.
4. There are 366 days in a leap year. Hence, a leap year contains 2 odd days.
5. There are 28 days in Feb. in an ordinary year while in leap year there are 29 days in Feb.
6. The day of week on Ist Jan. 1. AD is Monday.
7. After 11 years the calendar is repeated.

Important Points about Clock

1. The minute hand is also called, the **long hand** while hour hand is known as the **short hand.**
2. In every one hour, the minute hand gains 55 minutes on the hour hand.
3. The hands are in the same straight line when they are opposite to each other or coincident.
4. In every hour hands coincide once.
5. The hands coincide 11 times in every 12 hours.
6. The minutes hand moves 360° in 1 hour while hour moves 30° in 1 hour.

Example 1. Sita remembers that her brother Anuj's birthday was after 15th but before 20th September, while her mother remembers that Anuj's birthday was after 17th but before 19th September. On which date of September was Anuj's birthday.

Solution : According to Sita :

(15) 16 17 [18] (19)

According to her mother : (17) [18] (19)

According to both common day is 18th.

Hence, Anuj's birth was on 18th September.

Example 2. A bus for the station from Boring Road leaves after every half an hour. An enquiry clerk told a passanger that the last bus had left at 9·10 and the next bus leave after 15 minutes. At what time did the enquiry clerk give this information to the passenger ?

Solution : The interval of leaving two buses = 30 minutes

The time for the next bus = 15 minutes.

$\therefore$ Time passed = 30 – 15

= 15 minutes

$\therefore$ The required time for the information given by enquiry clerk = 9·10 + 0·15

= 9·25

Example 3. If 22nd August is Sunday. What day was on 22 days before ?

Solution : Difference of No. of days = 22

$\therefore$ No. of odd days = 1 $\left[\text{because } \frac{22}{7} = 3 + 1\right]$

$\therefore$ 1 day before Sunday is Saturday.

Hence, it will be Saturday before 22 days.

Example 4. If it was Sunday on 5th January, 2001, what will be the day on 7th April, 2001 ?

Solution : Total number of days from 5th Jan., 2001 to 7th April, 2001 = [(31 – 5) + 28 + 31 + 7]

= [26 + 28 + 31 + 7]

= 92

$\therefore$ No. of odd days = 1 $\left[\frac{92}{7} = 13 + 1\right]$

Hence it will Monday on 7th April, 2001.

Example 5. At what angle the hands of a clock are inclined when it is half past 8 ?

Solution : At half past 8, the minute hand points toward 6 and the hour hand points towards $2\frac{1}{2}$ marks between 8 and 9. The angle between 6 and 8 is 60° and the angle $2\frac{1}{2}$ minute space = $2\frac{1}{2} \times 6$

= 15°

$\therefore$ Total angle between the two hands

= 60 ° + 15°

= 75°

Exercise

1. Radha remembers that her father's birthday was after 16th but before 21st April, while her brother Mangesh remembers that his father's birthday was after 19th and before 22nd April. On what date his father's birthday falls ?
   (A) 19th April (B) 21st April
   (C) 20th April (D) Cannot be determined
   (E) None of these
2. Prabhat remembers that his mother's brithday falls after 17th but before 21st April while his sister Urmila remembers that her mother's birthday falls after 19th April but before 24th April. On what date her mother's birthday falls ?
   (A) 20th April (B) 21st April
   (C) 19th April (D) 22nd April
   (D) None of these

3. Standing on a platform Amit told Sunita that Aligarh was more than 10 km but less than 15 km from there. Sunita knew that it was more than 12 km but less than 14 km. If both of them were correct, which of the following could be the distance of Aligarh from there ?
(A) 11 km (B) 12 km
(C) 13 km (D) 15 km
(D) 14 km

4. Anuradha remembers that her friend had visited her after 13th but before 18th of the month, while Anuradha's sister remembers that Anuradha's friend had visited after 16th but before 20th. If it was Saturday on 16th, of the month, then on which day of the week, Anuradha's friend did visit to her ?
(A) Saturday (B) Monday
(C) Sunday (D) Data inadequate
(E) None of these

5. The priest told the devotee, "The temple bell is rung at regular intervals of 45 minutes. The last bell was rung 5 minutes ago. The next bell is due to be rung at 7·45 a.m." At what time did the priest give this infomation to the devotee ?
(A) 7·40 a.m. (B) 7·05 a.m.
(C) 7·00 a.m. (D) 6·55 a.m.
(D) None of these

6. A bus for Delhi leaves every thirty minutes from a bus stand. An enquiry clerk told a passenger that the bus had already left 10 minutes ago and the next bus will leave at 9·35 a.m. At what time did the enquiry clerk give this information to the passanger ?
(A) 9·10 a.m. (B) 8·55 a.m.
(C) 9·07 a.m. (D) 9·15 a.m.
(D) 9·05 a.m.

7. A bus for Bombay leaves every 40 minutes from a bus stand. An enquiry clerk told a person that the bus had already left 10 minutes ago and the next bus will leave at 10·45 a.m. At what time this information was given to the man ?
(A) 10·05 a.m. (B) 9·55 a.m.
(C) 10·35 a.m. (D) 10·15 a.m.
(E) 10·25 a.m.

8. The bus for Jaipur leaves every 25 minutes. An enquiry clerk told that last bus for Jaipur had already left 10 minutes to 2·00 p.m. At what time the next bus will leave for Jaipur ?
(A) 2·25 p.m. (B) 2·15 p.m.
(C) 2·05 p.m. (D) 2·40 p.m.
(E) None of these

9. If 18th Jan., 1997 falls on Tuesday, what day will fall on 18th Feb., 1997 ?
(A) Monday (B) Tuesday
(C) Thursday (D) Friday

10. If 1st October falls on Sunday, what day of the week will fall on Ist November ?
(A) Monday (B) Tuesday
(C) Wednesday (D) Thursday

11. If 17th Dec., 1982 falls on Saturday, what day of the week will fall on 22nd Dec., 1984 ?
(A) Monday (B) Tuesday
(C) Thursday (D) Sunday

12. If the seventh day of a month is three days earlier than Friday, what day will be on the 19th day of the month ?
(A) Sunday (B) Monday
(C) Wednesday (D) Friday

13. If the 1st day of an ordinary year (Not leap year) falls on Friday, then what will be the day on the last day of that year ?
(A) Monday (B) Friday
(C) Saturday (D) Sunday

14. Which of the following years, is a leap year ?
(A) 1982 (B) 1704
(C) 1978 (D) 1954

15. In $\frac{1}{2}$ hour, the minute hand of clock will rotate through an angle of—
(A) 75° (B) 60°
(C) 120° (D) 180°

16. A day after tomorrow will be X-mas-day. What will be the day on New-year-day if today is Monday ?
(A) Sunday (B) Thursday
(C) Wednesday (D) Monday

17. Two watches, one of which gained at the rate of 1 min. and the other lost at the rate of 1 min. daily, were set correctly at noon on the 1st Jan., 1978. When did the watches indicate the same time ?
(A) Dec. 27, 1978 mid-night
(B) Dec. 27, 1978 noon
(C) Dec. 28, 1978 noon
(D) Dec. 24, 1978 noon

18. A tired worker slept at 6·45 p.m. If he rose at 12 noon, for how many hours did he sleep ?
(A) 17 hours 15 min. (B) 5 hours 15 min.
(C) 12 hours (D) 6 hours 45 min.

19. A man is waiting for a bus of route number 1, 2 and 3. The bus of route number 1, passes after 5 minutes each, but of route number 2 after each 15 minutes and number 3 after each 45 minutes. But as he reaches the bus stop, a bus had just left. For atleast how long he has to wait for the bus ?
(A) 3 min. (B) 5 min.
(C) 7 min. (D) 9 min.

20. A college starts from 10 a.m. and continues till 1·30 p.m. In this duration there are 5 periods. If 5 minutes are provided before each period to leave the room and enter the other, then what is the duration of each period ?
(A) 41 min. (B) 38 min.
(C) 40 min. (D) 42 min.

21. Kamla is 42 weeks elder to me while Anuradha is 15 weeks elder to her. If Anuradha was born on Saturday, on which day was I born ?
(A) Friday (B) Wednesday
(C) Sunday (D) Saturday

22. Veerchand was born on 22nd March 1982. On what day of the week was he 14 years 7 months and 8 days of age ?
(A) Tuesday (B) Monday
(C) Sunday (D) Wednesday

23. Hemant took the calendar of the year 1990 and with its help he came to know about the days of the year. Can he use the same calendar for any other year ? If so then for which year ?
(A) 1998 (B) 2001
(C) 2005 (D) 2004

Directions—(24 to 27) Study the information given below and then answer each of these questions.
(i) Kamal is available at home from 12 noon to 4 p.m. on Tuesday, Thursday and Sunday.
(ii) His younger brother Navin is available at home on Monday, Thursday, Friday and Sunday between 10 a.m. to 2 p.m.
(iii) The eldest brother Rajeev is available between 9 a.m. to 12 noon on Monday, Wednesday and Thursday while 2 p.m. to 4 p.m. on Friday, Saturday and Sunday.

24. At a time on which day of week all the three brothers are available at home ?
(A) None
(B) Sunday
(C) Thursday
(D) Cannot be determined
(E) None of these

25. For how many days only one brother is available at a particular time in a week ?
(A) 1 (B) 2
(C) 3 (D) 4
(E) None of these

26. On which day(s) of a week the youngest and the eldest brothers are available at home at the same time ?
(A) Only Monday
(B) Monday and Thursday
(C) Only Thursday
(D) Only Friday
(E) None of these

27. An application was received by inward clerk in the afternoon of a week day. Next day he forwarded it to the table of the senior clerk, who was on leave that day. The senior clerk put up the application to the desk officer next day in the evening. The desk officer studied the application and disposed off the matter on the same day *i.e.*, Friday. Which day was the application received by the inward clerk ?
(A) Wednesday
(B) Monday
(C) Tuesday
(D) Previous Week's Saturday

Directions—(28 to 31) Study the following information and answer the questions given below it—
(i) An examination was held during two weeks of January—Sunday the 3rd to Saturday the 16th.
(ii) There was one paper each for six subjects *viz.*, Physics, Chemistry, Biology, Maths, English and Hindi. There was not more than one paper on any day.
(iii) No paper was held on Saturday and Sunday and the National holiday on 5th. Only three papers were there in a week.
(iv) Chemistry was before Biology and Maths was on the next day of Hindi.
(v) The day on which the papers of Biology and Maths were held was the same; while that of Physics and Chemistry was also the same.
(vi) There was no paper for three days between Physics and the paper prior to it.
(vii) Paper of Hindi and English were on Tuesday and Thursday respectively.
(viii) There was at least a gap of one day between any two Science-papers.

28. Which of the following group of papers was held in the first week ?
(A) Biology, Chemistry and English
(B) Biology and Chemistry only
(C) Hindi, Maths and Physics
(D) Chemistry, Biology and Hindi
(E) None of these

29. Which of the following papers was held on 4th ?
(A) Chemistry (B) English
(C) Physics (D) Mathematics
(E) No paper

30. If by rearrangement Mathematics was held on 15th, how many days' gap would have been there between Physics and Mathematics ?
(A) 1 (B) 2
(C) 3 (D) 4
(E) None of these

31. How many days' gap was there between Chemistry and English ?
(A) 1 (B) 2
(C) 3 (D) 4
(E) None of these

32. Shailendra takes casual leave only on first working day of every month. The office has weekly offs on Saturday and Sunday. In a month of 30 days, the first working day happened to be Tuesday. What will be the day for his next casual leave ?
(A) Wednesday (B) Thursday
(C) Friday (D) Monday
(E) None of these

33. A man has a job which requires to work 8 straight days and rest on the ninth day. If he started work on a Monday, the 12th time he rests will be on what day of the week ?
(A) Sunday (B) Friday
(C) Saturday (D) Wednesday
(E) Tuesday

34. Which of the following years is not a leap year ?
(A) 2000 (B) 1200
(C) 700 (D) 1600
(E) 800

35. How many times from 5 a.m. to 5 p.m. the hands are at right angles ?
(A) 24 (B) 22
(C) 16 (D) 21
(E) 23

36. At what angle the hands of a clock are inclined when it is half past 2 ?
(A) 105° (B) 107°
(C) 160° (D) 96°
(E) None of these

Answers with Explanations

1. (C) According to Radha : 17 18 19 $\boxed{20}$
and according to Mangesh : $\boxed{20}$ 21
∴ Radha's father's birthday falls on 20th April.

2. (A) According to Prabhat :
18 19 $\boxed{20}$
and according to Urmila : $\boxed{20}$ 21, 22, 23
∴ Urmila's mother's birthday falls on 20th April.

3. (C) According to Amit : 11 12 $\boxed{13}$ 14
but according to Sunita : $\boxed{13}$
∴ Reqd. distance = 13 km.

4. (C) According to Anuradha :
14 15 16 $\boxed{17}$
According to her sister : $\boxed{17}$ 18 19
∴ The friend visited on 17th of the month.
But it was Saturday on 16th.
Hence the friend visited on Sunday.

5. (B) The last bell rung at 7·45 – 0·45 = 7·00 a.m.
But this happened 5 minutes before.
Hence, the information was given at 7·05 a.m.

6. (D) Reqd. time at which the information was given
= Time for next bus to leave – The difference between two leaving buses + Time before the last bus left
= (9·35 – 0·30) + 0·10
= 9·15 a.m.

7. (D) Reqd. time = (10·45 – 0·40) + 0·10
= 10·15 a.m.

8. (B) Interval between two leaving buses
= 25 minutes
Time of leaving the last bus = 1·50 p.m.
∴ Reqd. time for the next bus = 1·50 + 0·25
= 2·15 p.m.

9. (D) No. of days from, 18th Jan. to 18 Feb. = 31.
$\because \quad \frac{31}{7} = 4 + \frac{3}{7}$
∴ No. of odd days = 3
∴ On 18th Feb. 1997, it will be Friday.

10. (C) No. of days from 1st October to 1 November = 31.
$\because \quad 31 = 4 + \frac{3}{7}$
∴ No. of odd days = 3
∴ On Ist November, it will be Wednesday.

11. (D) No. of days from 17th Dec., 1982 to 22nd Dec., 1984 = 365 × 2 + 5 + 1
[1 day of leap year 1984]
= 736
$\frac{736}{7} = 105\frac{1}{7}$
∴ No. of odd days = 1
Hence, on 22nd Dec., 1984, it will be Sunday.

12. (A) Three days earlier than Friday will be Tuesday.
$\because$ 7th day of the month is Tuesday
∴ 14th day of the month is Tuesday
Hence, 19th day of the month will be Sunday.

13. (B) No. of days from 1st Jan. to 31st Dec. of an ordinary year = 364.
$\because \quad \frac{364}{7} = 52 + 0$
∴ No. of odd days = 0
Hence, on 31st Dec. it will be Friday.

14. (B) As 1704 is Divisible by 4, hence, 1704 is a leap year.

15. (D) In $\frac{1}{2}$ hour the middle hand will move through
$= \frac{1}{2} \times 360° = 180°$

16. (C) Since X-mas day falls on 25th Dec., therefore today is 23rd Dec. Hence, on 23rd Dec., it is Monday.
No. of days from 23rd Dec. to 1st Jan. = 9
$9 = 1\frac{2}{7}$
Hence, number of odd days = 2
∴ It will be Wednesday on New Year day.

17. (B) The first watch gains on the second watch 1 + 1 *i.e.* 2 min. in a day.
The watches will indicate same time when one has gained 12 hours on the second.
As 2 minutes are gained in 1 day
∴ 12 hours are gained in $= \frac{1}{2} \times 12 \times 60$
= 360 days
Counting 360 days from 1st Jan., 1978 we get Dec. 27, 1978.

18. (A) Duration of his sleep = (12 – 6·45) + 12
= 5·15 + 12
= 17 hours 15 min.

19. (B) Minimum time among all three buses is 5 minutes.
Hence, he has to wait atleast for 5 minutes.

20. (B) Duration of college time

$= 1{\cdot}30 \text{ p.m.} - 10{\cdot}00 \text{ a.m.}$

$= 13{\cdot}30 - 10{\cdot}00$

$= 3{\cdot}30 \text{ hours}$

$= 210 \text{ minutes}$

Time left $= 5 \times 4 = 20$ minutes

$\therefore$ Time for 5 periods $= 210 - 20 = 190$ minutes

$\therefore$ Duration of 1 period $= \frac{190}{5}$

$= 38$ minutes.

21. (D) Difference between my age and Anuradha's age

$= 42 + 15$

$= 57$ weeks

$\therefore \quad = 57 \times 7$ days

$\therefore$ No. of odd days $= \frac{57 \times 7}{7}$

$= 57 + 0$

Since, odd day is 0, hence, I was born on Saturday.

22. (C) 14 years + 7 months + 8 days

= 11 ordinary years + 3 leap years + 7 months + 8 days

$= 11 \times 365 + 3 \times 366 + 30 + 31 + 30 + 30 + 31 + 30 + 31 + 8$

$= 5335$

No. of odd days $= \frac{5335}{7} = 762 + 1$

$\therefore$ His birthday will fall 1 day after Saturday *i.e.*, on Sunday.

23. (B) After 11 years the calendar is repeated. Hence, it can be used after 11 years *i.e.*, in 2001.

For Q. 24 to 26 :

	Kamal	Navin	Rajeev
Monday		10 a.m. to 2 p.m.	9 a.m. to 12 noon
Tuesday	12 noon to 4 p.m.		
Wednesday			9 a.m. to 12 noon
Thursday	12 noon to 4 p.m.	10 a.m. to 2 p.m.	9 a.m. to 12 noon
Friday		10 a.m. to 2 p.m.	2 p.m. to 4 p.m.
Saturday	12 noon to 4 p.m.	10 a.m. to 2 p.m.	2 p.m. to 4 p.m.

24. (A) 25. (D) 26. (B)

27. (A) The desk officer received the application on Friday clearly the application was forwarded to the table of the senior clerk on Thursday.

Therefore the application was received by the inward clerk on Wednesday.

For Q. 28 to 31 :

3 Jan.	Sunday	—
4 Jan.	Monday	Chemistry
5 Jan.	Tuesday	—
6 Jan.	Wednesday	Biology
7 Jan.	Thursday	English
8 Jan.	Friday	—
9 Jan.	Saturday	—
10 Jan.	Sunday	—
11 Jan.	Monday	Physics
12 Jan.	Tuesday	Hindi
13 Jan.	Wednesday	Maths
14 Jan.	Thursday	—
15 Jan.	Friday	—
16 Jan.	Saturday	—

28. (A) 29. (A) 30. (C) 31. (B)

32. (B) According to the question, first date of the month will be Tuesday then dates 8, 15, 22 and 29 will be on Tuesday also, therefore the first date of the month will be on Thursday. Hence Thursday will be the day of his next casual leave.

33. (D) The chart shows that on the 63rd he will be resting for the 7th time and he will begin working on a Monday again. Therefore the 8th time he rests is the same day to the week as the first time; and 12th time is on the same day as the 5th time or on a Wednesday.

Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	32	33	34
35	36	37	38	39	40	41
42	43	44	45	46	47	48
49	50	51	52	53	54	55
56	57	58	59	60	61	62
63	64					

34. (C) As 700 is not exactly divisible by 400, so 700 is not a leap year.

35. (B) The hands are 22 times at right angles in every 12 hours.

36. (A) At half past 2, the minute hand points towards 6 and the hour hand points towards $2\frac{1}{2}$ marks between 2 and 3. The angle between 3 and 6 is 90° and the angle $2\frac{1}{2}$ minute space $= 2\frac{1}{2} \times 6 = 15°$.

$\therefore$ Total angle between two hands

$= 90° + 15°$

$= 105°$

Mathematical Operations and Problems

In such type of test, the question are asked based on Arithmatic, Algebra and Geometry. In Arithmetic, the questions are asked related to Arithmatical signs. The candidates should have the knowledge that the sequential order of solving these signs is—Of, Division, Multiplication, Addition and Subtraction.

Besides this, in Geometry, the knowledge related to the area of various figures is essential and in Algebra the basic formulas and their derivations.

Example 1. If A means '+', D means '÷', P means 'X' and S means '–' then

32A66D2S8P10 = ?

(A) 15 (B) – 15
(C) 20 (D) – 20
(E) None of these

Answer with Explanation : (B) As given in the question

A = +
D = ÷
P = ×
S = –

Then, 32A66D 2S8P 10 = ?

$\therefore$? = 32 + 66 ÷ 2 – 8 × 10
= 32 + 33 – 80 = 65 – 80
= – 15

Example 2. In the following equation, two signs are interchanged, thus the equation is not proper. Find out the signs which we can interchange and get the proper equation again.

5 + 6 ÷ 3 – 12 × 2 = 17

(A) ÷ and × (B) + and –
(C) + and ÷ (D) + and ×

Answer with Explanation : (A) If we can interchange ÷ and × sign to each other, the new equation

5 + 6 × 3 – 12 ÷ 2 = 17

Will appear in place of

5 + 6 ÷ 3 – 12 ÷ 2 = 17

By solving

$5 + 6 \times 3 - 12 \div 2 = 5 \times 6 \times 3 - 12 \times \frac{1}{2}$

= 17

$\therefore$ By solving this equation in this way the answer is the same as given in the question.

$\therefore$ It is correct to interchange ÷ and × sign to each other.

Example 3. If ⊓ means +, ⊏ means –, ⊐ means × and ⊔ means ÷, || means =, → means the previous number is more than subsequent number, ← means previous number is lesser than the subsequent number.

Which of the following expression is correct ?

(A) (10 ⊓ 2) ⊐ (2 || 2) ← (10 ⊔ 2)
(B) (20 ⊏ 8) ⊔ (4 ⊏ 1) || (4 ⊓ 1)
(C) (12 ⊏ 4) ⊐ (5 ⊐ 1) ← (10 ⊓ 20)
(D) (10 ⊓ 2) ⊐ (2 ⊔ 2) → (10 ⊔ 2)
(E) (18 ⊔ 3) ⊏ (3 ⊓ 1) ⊓ (5 || 2)

Answer with Explanation : (D) Alternative (D) is found after putting the proper signs.

(10 + 2) × (2 ÷ 2) > (10 ÷ 2)
$\Rightarrow$ 12 × 1 > 5
$\Rightarrow$ 12 > 5
$\therefore$ Alternative (D) is the correct answer.

Example 4. There are three poles XYZ of different heights. Three spiders A, B and C start to climb simultaneously on poles in every effort. Spider A climbs up 5 cm on X pole but slips down 1 cm. Spider B climbs up 6 cm on Y pole but slips down 3 cms downwards. C climbs up 7 cm. of Z pole but slips down 2 cm downwards. If each of the spiders efforts 50 times to reach at the top of pole ? What is the height of the smallest pole ?

(A) 151 cm (B) 150 cm
(C) 250 cm (D) 200 cm
(E) 153 cm

Answer with Explanation : (E) A covered distance by its 50 efforts = 49 (5 – 1) + 5 = 196 + 5
= 201 cm

B covered distance by its 50 efforts

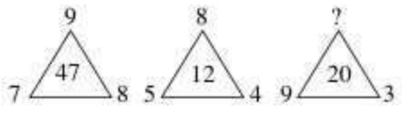
49 (6 – 3) + 6 = 147 + 6
= 153 cm

C covered distance in its 50 efforts

= 49 (7 – 2) + 7 = 245 + 7
= 252 cm

Hence, the height of the smallest pole
= 153 cm

Example 5. The numbers in following triangles are in some particular manner. There is a question mark in one of the triangles. The number will take place from the following given alternatives in place of question mark. Find out that alternative.



(A) 3 (B) 5
(C) 7 (D) 9
(E) 11

Answer with Explanation : (C) In the first Δ

7 × 8 – 9 = 47

In the second Δ triangle

$$5 \times 4 - 8 = 12$$

In the same way in the third Δ

$$9 \times 3 - ? = 20$$
$$27 - ? = 20$$
$$? = 27 - 20$$
$$= 7$$

Exercise 1

1. If '+' means '–', '÷' means '×', '–' means '÷' and '×' means '+'. The value of—

$$15 - 10 \div 20 \times 15 + 7 = ?$$

(A) 157 (B) 11
(C) 3/20 (D) 15
(E) None of these

2. If '+' means '÷', '–' means '+', '×' means '–' and '÷' means '×', then—

$$8 \div 6 - 3 \times 4 + 2 = ?$$

(A) 8·67 (B) 36
(C) 20 (D) 49
(E) None of these

3. If '×' means '–', '÷' means '×', '+' means '÷' and '–' means '+', what will be the value of following equation ?

$$18 + 6 \div 6 \times 4 - 3 = ?$$

(A) 19 (B) 9
(C) 22 (D) 17
(E) None of these

4. If '+' means '÷', '–' means '×', '÷' means '–' and '×' means '+', then—

$$8 + 4 \div 3 \times 5 - 8 = ?$$

(A) 39 (B) $6\frac{1}{2}$
(C) 43 (D) 38
(E) None of these

5. If '+' means '×', '÷' means '–', '×' means '÷' and '–' means '+', then—

$$(22 \times 2 \div 4 - 5) + 8 = ?$$

(A) 176 (B) 96
(C) 14 (D) 16
(E) None of these

6. If '+' means '÷', '–' means '×', '÷' means '–' and '×' means '+', then—

$$18 - 3 \times 4 + 6 \div 2 = ?$$

(A) 9 (B) – 18
(C) 14 (D) – 16
(E) None of these

7. If '+' means '÷', '×' means '–', '+' means '×', '–' means '+' what will be the value of following equation ?

$$9 + 3 \div 4 - 8 \times 2 = ?$$

(A) $-6\frac{1}{4}$ (B) $6\frac{3}{4}$
(C) $-1\frac{3}{4}$ (D) 18
(E) None of these

8. If '+' means '×', '×' means '–', '–' means '÷' and '÷' means '+', the value of following equation is—

$$15 + 7 \div 20 - 10 \times 2 = ?$$

(A) 501 (B) – 3/10
(C) 105 (D) 17/12
(E) None of these

9. If '+' means '×', '÷' means '–', '×' means '÷' and '–' means '+' then—

$$28 - 16 \times 4 + 12 \div 8 = ?$$

(A) 18·5
(B) 68
(C) 24
(D) Cannot be determined
(E) None of these

10. What will be difference between the original value of equation 3 × 4 ÷ 2 – 5 and its changed value after replacing the mathematical signs '×' to '+', '÷' to '–', '–' to '×' and '+' to ÷ ?

(A) 1 (B) 2
(C) 3 (D) 4

11. If '+' means '×', ÷ means '–', '×' means '÷' and '–' means '+', what is the value of following equation ?

$$255 \times 17 - 4 + 4 \div 5 = ?$$

(A) 30 (B) 26
(C) 34 (D) 20
(E) None of these

12. 'P' means '×', 'R' means '+', 'T' means '÷' and 'S' means '–' then—

18T3P9S8R6

(A) $-1\frac{1}{3}$ (B) 46
(C) 58 (D) 2/3
(E) None of these

13. If '@' means '×', '©' means '÷', '%' means '+' and '$' means '–', then—

$$6 \,\%\, 12 \,©\, 3 \,@\, 8 \,\$\, 3 = ?$$

(A) 37 (B) 35
(C) 39 (D) 33
(E) None of these

14. If '+' means '×', '×' means '÷', '÷' means '–' and '–' means '+' what is the value of—

$$17 + 15 - 135 \times 9 \div 70 = ?$$

(A) 270 (B) 240
(C) 170 (D) 200
(E) None of these

15. If '+' means '–', '–' means '×', '×' means '÷' and '÷' means '+', then what is the value of

$$40 \div 360 \times 24 - 4 + 18 = ?$$

(A) 118 (B) 82
(C) 72 (D) 90
(E) None of these

16. If '+' means '÷', '×' means '–', '÷' means '×' and '–' means '+', then—

$$16 \times 8 + 4 - 6 \div 3 = ?$$

(A) 130 (B) 14
(C) 32 (D) 18
(E) None of these

Exercise 2

Directions—(Q. 1–3) Following questions are based on the five numbers given below—

851, 743, 624, 319, 298

1. If the position of the first and the third digits in each of the above numbers are interchanged, which of the following will be the third highest number ?
(A) 851 (B) 743
(C) 624 (D) 319
(E) 298

2. If the position of the first and the second digits in each of the above numbers are interchanged, which of the following will be the second highest number ?
(A) 851 (B) 743
(C) 624 (D) 319
(E) 298

3. If the position of the second and the third digits in each of the above numbers are interchanged, which of the following will be the second smallest number ?
(A) 851 (B) 743
(C) 624 (D) 319
(E) 298

Directions–(Q. 4–8) Following questions are based on the five three digit numbers given below—

438, 285, 716, 342, 857

4. If only the position of the first and the last digits within each of the above numbers are interchanged, which of the following will be the smallest number ?
(A) 438 (B) 285
(C) 716 (D) 342
(E) 857

5. If only the position of the first and the second digits within each of the above numbers are interchanged, which of the following will be sum of the digits of the highest number ?
(A) 15 (B) 14
(C) 9 (D) 20
(E) None of these

6. If '5' is added to each of the above five numbers which of the following will be the middle digit of the lowest number ?
(A) 0 (B) 4
(C) 2 (D) 6
(E) None of these

7. If '1' is added to the middle digit of each of the above number and '1' is subtracted from the first digit of each of the above numbers, which of the following will be the third digit of the second highest number ?
(A) 8 (B) 6
(C) 5 (D) 2
(E) None of these

8. Which of the following is the sum of the second and the third digits of the highest number ?
(A) 7 (B) 11
(C) 12 (D) 13
(E) None of these

Directions—(Q. 9–11) Following questions are based on the five three-digit numbers given below—

518, 849, 365, 783, 291

9. If the positions of first and third digits in each number are interchanged, which of the following will be the second digit of third highest number ?
(A) 1 (B) 4
(C) 8 (D) 9
(E) 6

10. If the first digit in all the numbers starting with an even digit is replaced by a number preceding it, then which of the following will be the sum of the first digit of the resulting highest and the lowest numbers ?
(A) 4 (B) 8
(C) 7 (D) 6
(E) 13

11. If the positions of the first and the second digits in each number are interchanged, which of the following will be the second highest number ?
(A) 849 (B) 365
(C) 783 (D) 291
(E) 518

Directions—(Q. 12–15) Following questions are based on the five three-digit numbers given below—

693, 418, 752, 369, 984

12. If the positions of the first and the second digits within each number are interchanged, which of the following will be the sum of the second and third digits of the new lowest number ?
(A) 9 (B) 12
(C) 8 (D) 15
(E) 13

13. Which of the following is the last digit of the third highest number ?
(A) 3 (B) 8
(C) 2 (D) 9
(E) 4

14. Which of the following is the sum of the first and the second digits of the second lowest number ?
(A) 15 (B) 5
(C) 12 (D) 9
(E) 17

15. If the positions of the first and the third digits within each number are interchanged, which of the following will be the middle digit of the highest number ?
(A) 9 (B) 1

(C) 5 (D) 6
(E) 8

Directions—(Q. 16 and 17) These questions are based on the following set of numbers—

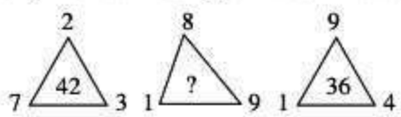
348, 436, 652, 198, 563

16. If the first and the third digit in each number are interchanged, which number will be the smallest ?
(A) 348 (B) 436
(C) 652 (D) 198
(E) 563

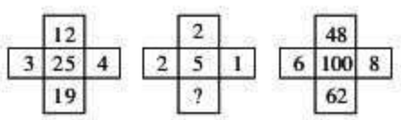
17. If the first two digits in each number are interchanged and then the newly formed numbers are arranged in descending order, which number will be second ?
(A) 348 (B) 436
(C) 652 (D) 198
(E) 563

Exercise 3

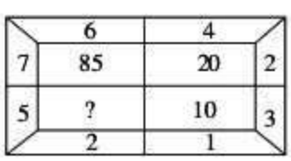
Directions—(Q. 1–5) In each of the following questions, a set of figures carrying certain characters is given. Assuming that the characters in each set follow a similar pattern, find the missing character in each case.

1. 

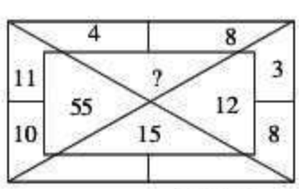
(A) 48 (B) 72
(C) 86 (D) 98
(E) 82

2. 

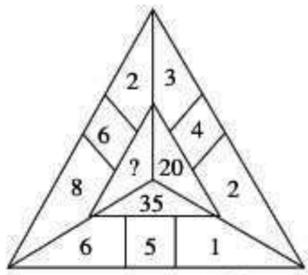
(A) 2 (B) 3
(C) 4 (D) 5
(E) 6

3. 

(A) 27 (B) 33
(C) 29 (D) 45
(E) 37

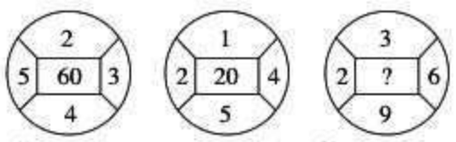
4. 

(A) 16 (B) 12
(C) 20 (D) 18
(E) 24

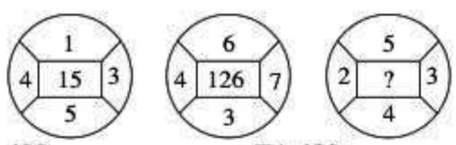
5. 

(A) 50 (B) 52
(C) 60 (D) 55
(E) 65

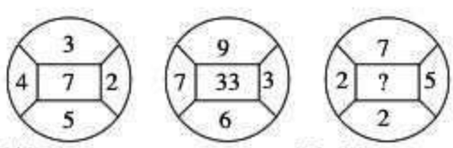
Directions—(Q. 6–10) In each of the following questions, a set of figures carrying certain characters is given. Assuming that the characters in each set follow a similar pattern, find the missing character in each case.

6. 

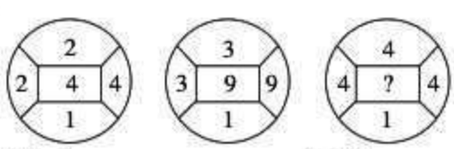
(A) 50 (B) 162
(C) 20 (D) 24
(E) 80

7. 

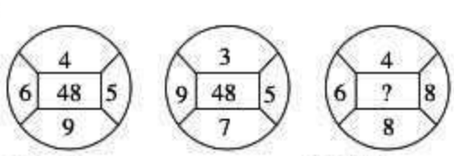
(A) 100 (B) 120
(C) 40 (D) 30
(E) 60

8. 

(A) 4 (B) 11
(C) 18 (D) 19
(E) 17

9. 

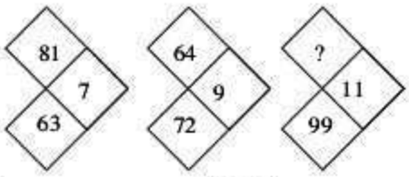
(A) 2 (B) 3
(C) 4 (D) 6
(E) 8

10. 

(A) 48 (B) 50
(C) 52 (D) 54
(E) 56

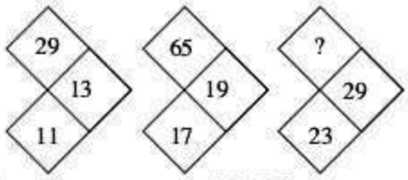
Directions—(Q. 11–17) In each of the following questions, a set of figures carrying certain characters is given. Assuming that the characters in each set follow a similar pattern, find the missing character in each case.

11.



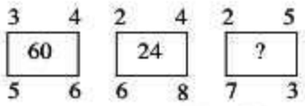
(A) 100 (B) 88
(C) 98 (D) 81
(E) 121

12.



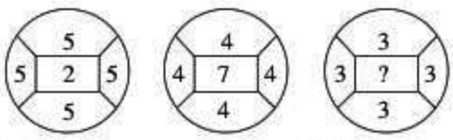
(A) 123 (B) 132
(C) 137 (D) 98
(E) 95

13.



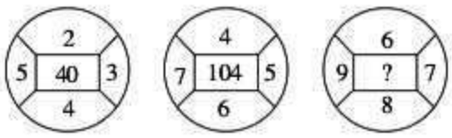
(A) 90 (B) 180
(C) 200 (D) 210
(E) 220

14.



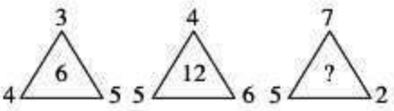
(A) 0 (B) 1
(C) 2 (D) 3
(E) 4

15.



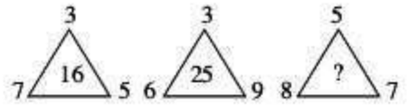
(A) 200 (B) 210
(C) 220 (D) 204
(E) 208

16.



(A) 2 (B) 3
(C) 5 (D) 7
(E) 9

17.



(A) 16 (B) 12
(C) 08 (D) 06
(E) 09

Directions—(Q. 18–21) Find the missing number from the given alternatives.

18. a = 23 (529) (1024),
b = 21 (441) (144)
c = 19 (361) (?)

(A) 1441 (B) 3529
(C) 9361 (D) 8281

19.

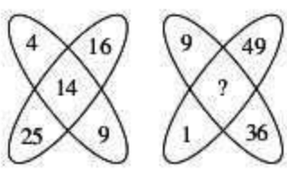
0	–1	–2
1	0	–1
2	?	0

(A) 1 (B) – 1
(C) – 2 (D) 4

20. 100 (6) 100 25 (5) 81 25 (4) 25 36 (?) 9
(25, 25, 25, 36, 25, 25, 25, 16)

(A) 3 (B) 2
(C) 5 (D) 4

21.



(A) 25 (B) 15
(C) 17 (D) 18

Directions—(Q. 22–27) Find the missing number from the given alternatives.

22. 3 (29) 5 5 (39) 3 7 (?) 3
(7, 6, 6, 2, 4, 5)

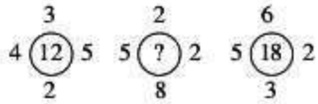
(A) 49 (B) 51
(C) 59 (D) 21

23. 3 (2) 8 4 (1) 6 12 (?) 8
(2, 3, 6, 6, 8, 4)

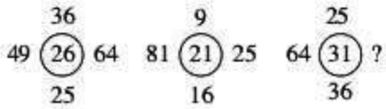
(A) 4 (B) 3
(C) 5 (D) 6

24. 2 (2) 4 5 (19) 7 8 (?) 10
(1, 2, 4, 3, 4, 5)

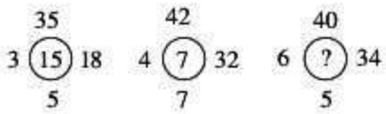
(A) 60 (B) 20
(C) 40 (D) 45

25. 

(A) 12 (B) 14
(C) 18 (D) 16

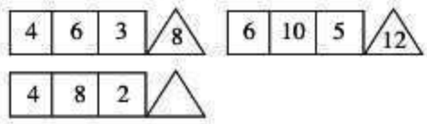
26. 

(A) 144 (B) 125
(C) 35 (D) 169

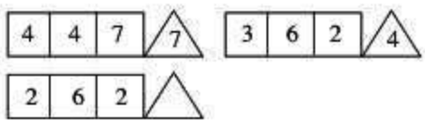
27. 

(A) 9 (B) 6
(C) 7 (D) 8

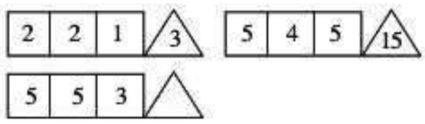
Directions—(Q. 28–32) Some numbers are given in three sets of box of each question. A number is written in the triangles of first two sets. The given number in triangles has in same similar pattern. Keeping the same pattern in the mind, find the number for the third triangle. Each question has different pattern.

28. 

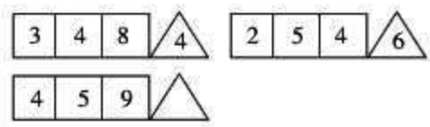
(A) 8 (B) 12
(C) 16 (D) 20

29. 

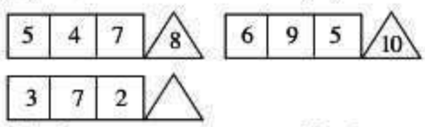
(A) 2 (B) 4
(C) 6 (D) 8

30. 

(A) 11 (B) 15
(C) 19 (D) 22

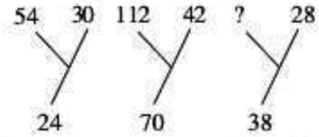
31. 

(A) 8 (B) 9
(C) 10 (D) 11

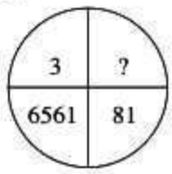
32. 

(A) 1 (B) 3
(C) 4 (D) 6

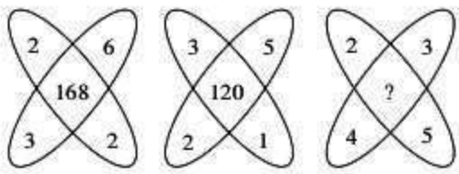
Directions—(Q. 33–35) Find the missing number of each question.

33. 

(A) 76 (B) 66
(C) 10 (D) None of these

34. 

(A) 18 (B) 27
(C) 24 (D) 9

35. 

(A) 240 (B) 195
(C) 84 (D) None of these

Exercise 4

1. How many such digits are there in the number 4251698 each of which is as far away from the beginning of the number as when the digits are arranged in ascending order ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

2. How many such digits are there in the number 28534971 each of which is as far away from the beginning of the number as when the digits are arranged in ascending order ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

3. How many such digits are there in the number '37152869' each of which is as far away from the beginning of the number as when the digits are arranged in ascending order within the number ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

4. How many such pairs of digits are there in the number 54386179, each of which has as many digits between them in the number as when the digits are arranged in descending order within the number ?
(A) One (B) Two
(C) Three (D) Four
(E) More than four

5. How many such digis are there in the number 521468, the positions of which remain unchanged

even after the digits are arranged in ascending order ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

6. How many such digits are there in the number 5236978 each of which is as far away from the beginning of the number as when the digits are rearranged in ascending order within the number ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

7. How many such numerals are there in the number 2576489, which will remain at the same position when aranged in ascending order from left to right ?

(A) One (B) Two
(C) Three (D) None
(E) More than three

8. How many such digits are there in the number 5831649 each of which is as far away from the beginning of the number as when the digits are rearranged in ascending number ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

9. How many such pairs of digits are there in number '36725918' each of which has as many digits between them in the number as when the digits are arranged in descending order within the numbers ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

10. How many such digits are there in the number 5831649 each of which is as far away from the beginning of the number as when the digits are rearranged in ascending order ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

11. How many such pairs of digits are there in the number 27651489 each of which has as many digits between them in the number as when the digits are arranged in descending order within the number ?

(A) None (B) Three
(C) Two (D) One
(E) More than three

12. How many such digits are there in the number 52137864 each of which is as far away from the beginning of the number as when they are arranged in descending order ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

Answers with Explanations

Exercise 1

1. (E) $15 - 10 \div 20 \times 15 + 7 = 15 \div 10 \times 20 + 15 - 7$

$$\text{By using proper signs} = \frac{3}{2} \times 20 + 15 - 7$$
$$= 30 + 15 - 7$$
$$= 38$$

2. (D) $8 \div 6 - 3 \times 4 + 2$

By using symbolic signs in place of above mentioned signs

$\Rightarrow$ $8 \times 6 + 3 - 4 \div 2$

$\Rightarrow$ $48 + 3 - 2 = 49$

3. (D) $18 + 6 \div 6 \times 4 - 3$

By using symbolic signs in place of above mentioned signs

$\Rightarrow$ $18 \div 6 \times 6 - 4 + 3$

$\Rightarrow$ $3 \times 6 - 4 + 3$

$\Rightarrow$ 17

4. (A) $8 + 4 \div 3 \times 5 - 8$

By using proper mathematical signs in place of above mentioned signs

$\Rightarrow$ $8 \div 4 - 3 + 5 \times 8$

$\Rightarrow$ $2 - 3 + 40$

$\Rightarrow$ 39

5. (B) $(22 \times 2 \div 4 - 5) + 8$

By using proper mathematical signs in place of above mentioned signs

$\Rightarrow$ $(22 \div 2 - 4 + 5) \times 8$

$\Rightarrow$ $(11 - 4 + 5) \times 8$

$\Rightarrow$ 12×8

$\Rightarrow$ 96

6. (E) $18 - 3 \times 4 + 6 \div 2$

By using proper mathematical signs in place of above mentioned signs

$\Rightarrow$ $18 \times 3 + 4 \div 6 - 2$

$\Rightarrow$ $54 + \frac{4}{6} - 2$

$\Rightarrow$ $54 + \frac{2}{3} - 2$

$\Rightarrow$ $\frac{54 \times 3 + 2 - 2 \times 3}{3}$

$\Rightarrow$ $\frac{158}{3} \Rightarrow 52\frac{2}{3}$

7. (D) $9 + 3 \div 4 - 8 \times 2$

By using proper mathematical signs in place of above mentioned signs

$9 \div 3 \times 4 + 8 - 2$

$\Rightarrow$ $3 \times 4 + 8 - 2 = 18$

8. (C) $15 + 7 + 20 - 10 \times 2$

By using proper mathematical signs in place of above mentioned signs

$\Rightarrow$ $15 \times 7 + 20 \div 10 - 2$

$\Rightarrow$ $15 \times 7 + 2 - 2$

$\Rightarrow$ 105

9. (B) $28 - 16 \times 4 + 12 \div 8$
By using proper mathematical signs in place of above mentioned signs
$\Rightarrow \quad 28 + 16 \div 4 \times 12 - 8$
$\Rightarrow \quad 28 + 4 \times 12 - 8$
$\Rightarrow \quad 28 + 48 - 8 = 68$

10. (A) $3 \times 4 \div 2 - 5 + 5 = 6$
By placing the
$3 + 4 - 2 \times 5 \div 5 = 3 + 4 - 2 \times 1$
$= 3 + 4 - 2$
$= 7 - 2 = 5$
$\therefore$ Answer is $= 6 - 5$
$= 1$

11. (B) $255 \times 17 - 4 + 4 \div 5 = ?$
By using proper mathematical signs in place of above mentioned signs
$? = 255 \div 17 + 4 \times 4 - 5$
$= 255 \times \frac{1}{17} + 4 \times 4 - 5$
$= 15 + 16 - 5 = 26$

12. (E) Placing the signs according to the question
18T3P9S8R6 = ?
$\therefore \quad ? = 18 \div 3 \times 9 - 8 + 6$
$= 6 \times 9 - 8 + 6$
$= 54 - 8 + 6$
$= 60 - 8$
$= 52$

13. (B) $6 \,\%\, 12 \,©\, 3 \,@\, 8 \,\$\, 3 = 6 + 12 \div 3 \times 8 - 3$
$= 6 + 4 \times 8 - 3$
$= 6 + 32 - 3$
$= 35$

14. (D) $17 + 15 - 135 \times 9 \div 70$
$= 17 \times 15 + 135 \div 9 - 70$
$= 255 + 15 - 70$
$= 200$

15. (B) $40 \div 360 \times 24 - 4 + 18$
$\Rightarrow \quad 40 + 360 \div 24 \times 4 - 18$
$\Rightarrow \quad 40 + \frac{360}{24} \times 4 - 18$
$\Rightarrow \quad 40 + 60 - 18$
$\Rightarrow \quad 82$

16. (C) $? = 16 \times 8 + 4 - 6 \div 3$
$= 16 - 8 \div 4 + 6 \times 3$
$= 16 - 2 + 18$
$= 32$

Exercise 2

1. (C) 851 743 624 319 298
↓ ↓ ↓ ↓ ↓
158 347 426 913 892
913, 892, **426,** 347, 158
Hence reqd. number is 624.

2. (A) 851 743 624 319 298
↓ ↓ ↓ ↓ ↓
581 473 264 139 928
$\therefore$ Reqd. number is 851.

3. (D) 851 743 624 319 298
↓ ↓ ↓ ↓ ↓
815 734 642 **391** 289
Hence the reqd. number is 319.

4. (D) 438 285 716 342 857
↓ ↓ ↓ ↓ ↓
834 582 617 243 758
$\therefore$ The smallest number is 342.

5. (A) 438 285 716 342 857
↓ ↓ ↓ ↓ ↓
348 825 176 432 587
$\therefore$ The highest number is 825. The sum of its digits
$= 8 + 2 + 5 = 15$

6. (E) On adding 5 to each of the above numbers
443 290 721 347 862
$\therefore$ The lowest number is 290 where middle digit is 9.

7. (B) 438 → 348,
285 → 195,
716 → 626,
342 → 252
and 857 → 767
The second highest number is 626 whose third digit is 6.

8. (C) The second and the third digits of 857 are 5 and 7 respectively.
$\therefore \quad 5 + 7 = 12$

9. (E) 518 849 365 783 291
815 948 563 387 192
$\therefore$ Second digit of the third highest number is '6'.

10. (E) Numbers starting with even digit = 849, 291.
As per question, 489, 921.
$\therefore$ Required sum $= 9 + 4 = 13$

11. (C) 518 849 365 783 291
158 489 635 873 921
$\therefore$ The second highest number is 783.

12. (B) 693, 418, 752, 369, 984
963, 148, 572, 639, 894
$4 + 8 = 12$

13. (A) Third digit of 693 is 3.

14. (B) The sum of 418 1st and 2nd digits = 4 + 1 = 5.

15. (D) 693, 418, 752, 369, 984
396, 814, 257, 963, 489
The middle of the highest number is 6.

16. (C) 348 436 652 198 563
↓ ↓ ↓ ↓ ↓
843 634 256 891 365
$\therefore$ The smallest number is 652.

17. (E) 348 436 652 198 563

↓ ↓ ↓ ↓ ↓

438 346 562 918 653

In descending order :

918, 653, 562, 438, 346

Second number is 563.

Exercise 3

1. (B) $7 \times 2 \times 3 = 42$

$1 \times 9 \times 4 = 36$

In the same way, $? = 1 \times 8 \times 9 = 72$

2. (D) $3 + 12 + 4 = 19$

$6 + 48 + 8 = 62,$

In the same way, $? = 2 + 2 + 1 = 5$

3. (C) $(4)^2 + (2)^2 = 20,$

$(3)^2 + (1)^2 = 10,$

$(7)^2 + (6)^2 = 85$

In the same way, $? = (5)^2 + (2)^2 = 29$

4. (A) $3 \times 8 \rightarrow 24 \div 2 = 12,$

$6 \times 5 \rightarrow 30 \div 2 = 15,$

$10 \times 11 \rightarrow 110 \div 2 = 55$

In the same way, $? = 4 \times 8 \rightarrow 32 \div 2 = 16$

5. (C) $(6 + 1) \times 5 = 35,$

$(3 + 2) \times 4 = 20$

In the same way, $? = (2 + 8) \times 6 = 60$

6. (B) $\frac{4 \times 5 \times 2 \times 3}{2} = 60, \frac{5 \times 2 \times 1 \times 4}{2} = 20,$

and $\frac{9 \times 2 \times 3 \times 6}{2} = 162$

7. (D) $\frac{4 \times 1 \times 3 \times 5}{4} = 15, \frac{4 \times 6 \times 7 \times 3}{4} = 126$

and $\frac{2 \times 5 \times 3 \times 4}{4} = 30$

8. (A) $(5 \times 3) - (4 \times 2) = 7,$

$(9 \times 6) - (7 \times 3) = 33$

and $(7 \times 2) - (2 \times 5) = 4$

9. (E) $\sqrt{2 \times 2 \times 4 \times 1} = 4,$

$\sqrt{3 \times 3 \times 9 \times 1} = 9$

and $\sqrt{4 \times 4 \times 4 \times 1} = 8$

10. (C) $(6 + 4 + 5 + 9) \times 2 = 48$

$(9 + 3 + 5 + 7) \times 2 = 48$

and $(6 + 4 + 8 + 8) \times 2 = 52$

11. (D) $63 \div 7 = (9)^2 = 81$

$72 \div 9 = (8)^2 = 64$

$99 \div 11 = (9)^2 = 81$

12. (C) $\frac{a^2 + b^2}{10} = c$

$\frac{(23)^2 + (29)^2}{10} = \frac{529 + 841}{10} = 137$

13. (D) L.C.M. $3, 4, 5, 6 = 60$

$2, 4, 6, 8 = 24$

$2, 5, 7, 3 = 210$

14. (D) $5 + 5 + 5 + 5 = 20 = 2 + 0 = 2$

$4 + 4 + 4 + 4 = 16 = 1 + 6 = 7$

In the same way,

$3 + 3 + 3 + 3 = 12 = 1 + 2 = 3$

$\therefore \quad ? = 3$

15. (A) $(5)^2 + (4)^2 + (3)^2 + (2)^2$

$- (5 + 4 + 3 + 2) = 40$

$(7)^2 + (6)^2 + (5)^2 + (4)^2$

$- (7 + 6 + 5 + 4) = 104$

$(9)^2 + (6)^2 + (7)^2 + (8)^2$

$- (9 + 6 + 7 + 8) = 200$

16. (D) $\frac{3 \times 4 \times 5}{10} = 6,$

$\frac{4 \times 6 \times 5}{10} = 12,$

$\frac{7 \times 5 \times 2}{10} = 7$

17. (E) $7 + 5 = \frac{12}{3} = (4)^2 = 16$

$9 + 6 = \frac{15}{3} = (5)^2 = 25$

$7 + 8 = \frac{15}{5} = (3)^2 = 9$

18. (D) $a = 23 \Rightarrow (23)^2 = (529)$

32 (Reverse Order) $\Rightarrow (32)^2 = (1024)$

$b = 21 \Rightarrow (21)^2 = (441)$

12 (Reverse Order) $\Rightarrow (12)^2 = (144)$

$\therefore \quad c = 19 \Rightarrow (19)^2 = (361)$

91 (Reverse Order) $\Rightarrow (91)^2 = (8281)$

19. (A) $2 - 2 = 0$ (Middle number)

$0 - 0 = 0$ (Middle number)

$1 - 1 = 0$ (Middle number)

Hence, $-1 + ? = 0$ (Middle number)

$? = 1$

It means we get the middle number by adding the number of both the corners of diagonal and centre left and centre right. Hence, the middle number will occur by adding the upper middle and the lower middle number.

20. (D) $\because \sqrt{100} + \sqrt{25} + \sqrt{100} + \sqrt{25}$

$= 10 + 5 + 10 + 5$

$= 30$

$\Rightarrow \quad \frac{30}{5} = 6$

$\sqrt{25} + \sqrt{25} + \sqrt{81} + \sqrt{36} = 5 + 5 + 9 + 6$

$= 25$

$\Rightarrow \quad \frac{25}{5} = 5$

$\sqrt{25}+\sqrt{25}+\sqrt{25}+\sqrt{25} = 5+5+5+5$

$= 20$

$\Rightarrow \quad \frac{20}{5} = 4$

Hence, $\sqrt{36}+\sqrt{49}+\sqrt{9}+\sqrt{16}$

$= 6+7+3+4$

$= 20$

$\Rightarrow \quad \frac{20}{5} = 4$

$\therefore \quad ? = 4$

21. (C) $\because \sqrt{4}+\sqrt{16}+\sqrt{9}+\sqrt{25}$

$= 2+4+3+5$

$= 14$ (Middle number)

and $\sqrt{9}+\sqrt{49}+\sqrt{36}+\sqrt{1}$

$= 3+7+6+1$

$= \boxed{17}$ (Middle number)

$\therefore \quad ? = 17$

22. (B) $(7\times2)+(3\times5) = 14+15$

$= 29$

and $(6\times4)+(5\times3) = 24+15$

$= 39$

In the same way,

$(6\times5)+(7\times3) = 30+21$

$= 51$

23. (A) $(8\times3)\div(6\times2) = 24\div12$

$= 2$

and $(6\times4)\div(8\times3) = 24\div24$

$= 1$

In the same way,

$(12\times8)\div(4\times6) = 96\div24$

$= 4$

24. (C) $(4\times2)-(3\times1)\times2 = 8-6$

$= 2$

$(7\times5)-(4\times2)\times2 = 35-16=19$

In the same way,

$(10\times8)-(5\times4)\times2 = 80-40$

$= 40$

25. (D) $\frac{2\times4\times3\times5}{10} = 12,$

$\frac{3\times5\times6\times2}{10} = 18$

In the same way,

$\frac{8\times5\times2\times2}{10} = \boxed{16}$

26. (A) $\sqrt{36}+\sqrt{64}+\sqrt{25}+\sqrt{49} = 6+8+5+7=26$

and $\sqrt{9}+\sqrt{25}+\sqrt{16}+\sqrt{81} = 3+5+4+9=21$

In the same way,

$\sqrt{25}+\sqrt{x}+\sqrt{36}+\sqrt{64} = 31$

$5+\sqrt{x}+6+8 = 31$

$\sqrt{x}+19 = 31$

$\sqrt{x} = 31-19$

$= 12$

$\therefore \quad x = (12)^2 = 144$

27. (C) $(35-5)-(18-3) = 30-15$

$= 15$

$(42-7)-(34-6) = 35-28=7$

In the same way,

$(40-5)-(34-6) = 35-28$

$= \boxed{7}$

28. (C) By multyplying numbers of the first and second box and then dividing by the number of the third box, we get the number which is displayed in the triangle as $\frac{4\times6}{3}=8$, the same pattern has been adopted in the second set thus by following the same pattern in the third set—

△ the desired number $= \frac{4\times8}{2}=16$

29. (C) By multiplying the number of the second box with the number of the first box and then by multiplying the quotient with the number of third box, here we get the number of the triangle—

$= \frac{4}{4}\times7=7$

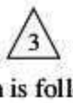
The same pattern in the second set—

$= \frac{6}{3}\times2=4$

The same pattern in the third set—

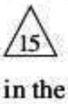
$= \frac{6}{2}\times2=6$

30. (D) In the first set, we multiply the number of the first box with the number of the second box and then subtract the number of the third box from the product of the multiplied number and put the number in the triangle—



$= 2\times2-1=3$

The same pattern is followed in the second set—



$= 5\times4-5=15$

In the same way, in the third set—

$= 5\times5-3$

$= 22$

31. (D) In the first set, we multiply the number of the first box with the number of the second box and then subtract the number of the third box from the product and put the number in the triangle as—

$= 3\times4-8=4$

The same pattern is followed in the second set as—

$$\triangle 6 = 2 \times 5 - 4$$
$$= 6$$

In the same way, in the third set

$$\triangle ? = 4 \times 5 - 9$$
$$= 11$$

32. (D) Dividing the addition of the first, second, third number of the first set by 2 and the quotient is put in the triangle as—

$$\triangle 8 = \frac{5+4+7}{2} = 8$$

The same pattern is followed in the second set as—

$$\triangle 10 = \frac{6+9+5}{2} = 10$$

33. (B) $54 - 30 = 24$,
$112 - 42 = 70$
In the same way,
$? - 28 = 38$
$\therefore \quad ? = 38 + 28$
$= 66$

34. (D) $(3)^2 = 9, (9)^2 = 81$,
$(81)^2 = 6561$

35. (B) As,
$2 + 6 + 2 + 3 = (13)^2 - 1$
$= 168$
and $3 + 5 + 1 + 2 = (11)^2 - 1$
$= 120$
In the same way,
$2 + 3 + 5 + 4 = (14)^2 - 1$
$= 195$

Exercise 4

1. (C) 4 [2] 5 1 [6] 9 8
1 [2] 4 5 [6] 8 9

2. (A) 2 8 5 3 4 9 7 1
1 2 3 4 5 7 8 9

3. (C) 3 7 1 [5] 2 8 6 [9]
1 2 3 [5] 6 7 8 [9]

4. (E) Number → 54386179
Descending order → 98765431
Required pairs → 3-4, 3-5, 5-8, 6-9, 3-7.

5. (D) 5 2 1 4 6 8
↓ ↓ ↓
1 2 4 5 6 8

6. (B) 5 2 3 (6) 9 7 8
2 3 5 (6) 7 8 9

07. (E) [2] 5 7 [6] 4 [8] [9]
[2] 4 5 [6] 7 [8] [9]

8. (C) 5 8 3 1 [6] 4 [9]
1 3 4 5 [6] 8 [9]

09. (C) 3 6 [7] 2 [5] 9 1 8
9 8 [7] 6 [5] 3 2 1

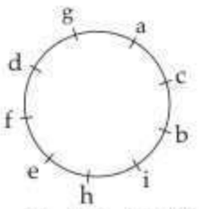
10. (C) 5 8 3 1 [6] 4 [9]
1 3 4 5 [6] 8 [9]

11. (E) 2 7 6 5 1 4 8 9
9 8 7 6 5 4 2 1
8-9, 5-9, 5-6, 5-8, 6-7, 7-5.

12. (A) 5 2 1 3 7 8 6 4
8 7 6 5 4 3 2 1

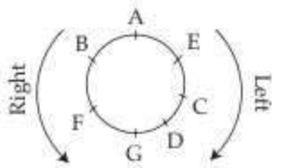
Continued from Page 118

For Q. 59 to 64 :



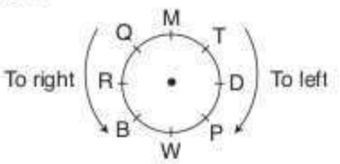
59. (B) 60. (A) 61. (E) 62. (C) 63. (E) 64. (B)

For Q. 65 to 69 :



65. (E) 66. (A) 67. (B) 68. (D) 69. (C)

For Q. 70 to 75 :



70. (C) 71. (E) 72. (B) 73. (D) 74. (A)
75. (D) 76. (D)
77. (B) Total number of children in the row
$= 15 + 4 + 8 - 1$
$= 26$

78. (B) 19 + • + 11
15 Mohan
• + 14
Pratap
$\therefore$ There are 2 boys between Mohan and Pratap.

79. (C) 7 + • • • • • • •
Sunetra Sujit
$\therefore$ Rank of Sujit from the top $8 + 5 = 13$th
$\therefore$ Rank of Sujit from the bottom
$= (40 - 13) + 1$
$= 28$th

To Find the Number of Triangles and Rectangles

In such type of questions, a complex figure is given in which triangles, rectangles or squares are to be counted. The questions are designed to test the analytical approach of the students.

From the given examples, we can clarify the concept.

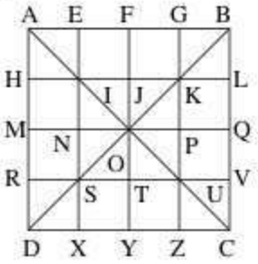
Example 1. How many triangles are given in the following figure ?

(A) 6 (B) 8
(C) 10 (D) 12
(E) None of these

Answer with Explanation : (C) There are 10 triangles in the figure—

1. GHI 2. IJK 3. AKL 4. ABC
5. CDE 6. GEF 7. EHK 8. DHL
9. BEK 10. BFJ

Example 2. How many squares are there in the following figure ?



(A) 30 (B) 31
(C) 16 (D) 22
(E) None of these

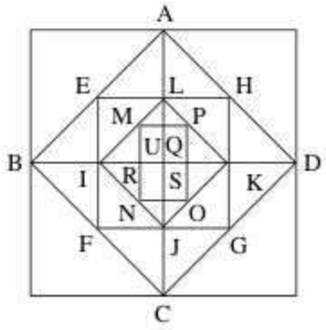
Answer with Explanation : (B) There are 31 squares in the figure—

1. ABCD, 2. AEIH, 3. EFJI,
4. FGKJ, 5. GBLK, 6. HINM,
7. IJON, 8. JKPO, 9. KLQP,
10. MNSR, 11. NOTS, 12. OPUT,
13. PQVU, 14. RSXD, 15. STYX,
16. TUZY, 17. UVCZ, 18. IKUS,
19. AFOM, 20. FBQO, 21. MOYD,
22. OQCY, 23. AGUR, 24. NPZX,
25. BESV, 26. CLIY, 27. DHKZ,
28. EGPN, 29. HJTR, 30. IKUS,
31. JLVT.

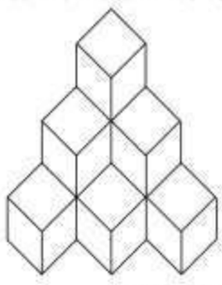
Exercise

1. How many triangles are there in the following figure ?

(A) 36 (B) 44
(C) 40 (D) 48
(E) 32

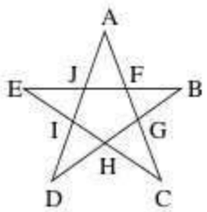


2. How many cubes are there in the following figure ?



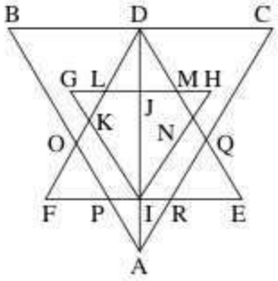
(A) 6 (B) 10
(C) 12 (D) 8

3. How many triangles are there in the following figure ?



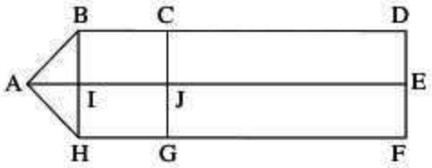
(A) 5 (B) 8
(C) 14 (D) 10

4. How many triangles are there in the following figure ?



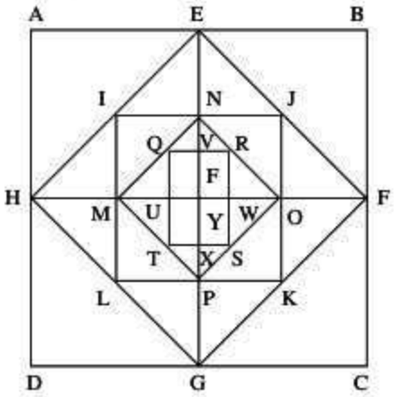
(A) 29 (B) 23
(C) 25 (D) 21

5. How many rectangles are there in the following figure ?



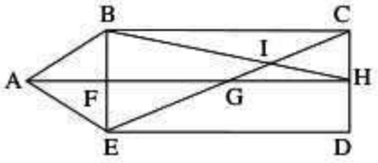
(A) 9 (B) 8
(C) 7 (D) 6

6. How many squares are there in the following figure ?



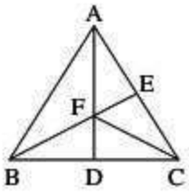
(A) 13 (B) 17
(C) 16 (D) 12

7. How many triangles can be formed in the following figure ?



(A) 12 (B) 14
(C) 13 (D) 15

8. How many triangles can be formed in the following figure ?

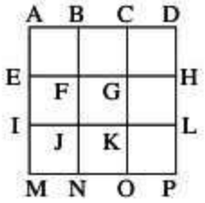


(A) 9 (B) 11
(C) 10 (D) 12

9. How many triangles are there in the following figure ?

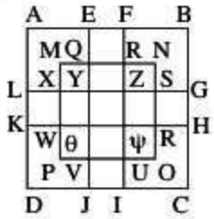
(A) 9 (B) 8
(C) 7 (D) 6

10. What is the maximum number of squares in the following figure ?



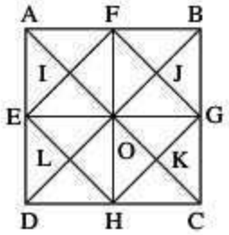
(A) 9 (B) 14
(C) 13 (D) 10

11. How many squares are there in the following figure ?



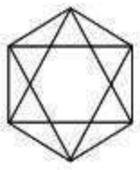
(A) 18 (B) 19
(C) 25 (D) 28

12. How many triangles and squares are there in the following figure ?



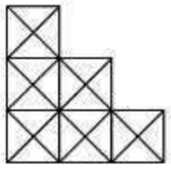
(A) 24 Triangles, 6 Squares
(B) 44 Triangles, 10 Squares
(C) 14 Triangles, 16 Squares
(D) 24 Triangles, 9 Squares

13. How many triangles are there in the following figure ?



(A) 18 (B) 20
(C) 26 (D) 32

Direction—(Q. 14–16) In the following figure—



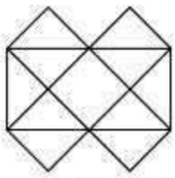
14. How many squares are there ?

(A) 14 (B) 13
(C) 12 (D) 10

15. How many rectangles are there ?
(A) 8 (B) 11
(C) 14 (D) 17

16. How many triangles are there ?
(A) 69 (B) 70
(C) 71 (D) 72

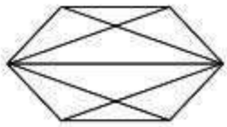
Directions—(Q. 17–18) Study the following figure and answer the questions.



17. How many squares are there in the figure ?
(A) 5 (B) 6
(C) 7 (D) 8

18. How many triangles are there in the figure ?
(A) 12 (B) 20
(C) 22 (D) 24

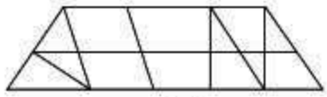
Directions—(Q. 19–21) Study the following figure and answer the questions.



19. How many pentagons are there in the figure ?
(A) 2 (B) 3
(C) 4 (D) 6

20. How many quadrilaterals are there in the figure ?
(A) 9 (B) 10
(C) 7 (D) 11

21. Calculate the triangles in the following figure ?



(A) 7 (B) 8
(C) 9 (D) 11

Answers with Explanations

1. (B) There are forty-four triangles in the figure—
1. AEL, 2. AHL, 3. DHK,
4. DGK, 5. CGJ, 6. CFJ,
7. BFI, 8. BEI, 9. EIL,
10. HKL, 11. GKJ, 12. FIJ,
13. IMR, 14. LMQ, 15. LPQ,
16. KPT, 17. KOT, 18. JOS,
19. JNS, 20. INR. 21. AEH,
22. DGH, 23. CFG, 24. BEF,
25. LMP, 26. KOP, 27. JON,
28. IMN, 29. ABU, 30. ADU,
31. CDU, 32. BCU, 33. ABD,
34. ABC, 35. ACD, 36. BCD,
37. IJK, 38. IKL, 39. ILU,
40. IJU, 41. JKL, 42. IJL,
43. JKU, 44. KLU.

2. (B) No. of cubes in the lower part of the figure
$= 3 \times 1 + 2 \times 2 + 1 \times 3$
$= 3 + 4 + 3$
$= 10$

3. (D) There are 10 triangles in the figure—
1. AJF, 2. BFG, 3. CGH,
4. DHI, 5. EIJ, 6. AIC,
7. ADG, 8. EHB, 9. EFC and
10. DBJ.

4. (A) There are 29 triangles in the figure—
1. DEF, 2. ABC, 3. GKL,
4. MHN, 5. DLJ, 6. DMJ,
7. QRE, 8. AIR, 9. PIA,
10. OPF, 11. BDO, 12. CDQ,
13. DLM, 14. PRA, 15. KFI,
16. NEI, 17. HJI 18. GJI,
19. DKI, 20. DNI, 21. DIE,
22. DFI, 23. DOA, 24. DQA,
25. DBA, 26. DCA, 27. GHI,
28. OBD, 29. QDC.

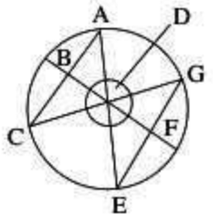
5. (A) There are 9 rectangles in the figure—
1. BDFH, 2. BCGH, 3. CDFG,
4. BCJI, 5. CDEJ, 6. EFGJ,
7. GHIJ, 8. BDEI and 9. EFHI.

6. (B) There are 17 squares in the figure—
1. ABCD, 2. EFGH, 3. IJKL,
4. MNOP, 5. QRST, 6. QVYU,
7. VRWY, 8. WSXY, 9. XTUY,
10. AEYH, 11. EBFY, 12. FCGY,
13. GDHY, 14. NJOY, 15. KPYO,
16. PLMY, 17. MYNI.

7. (D) There are 15 triangles in the figure—
1. ABE, 2. AEF, 3. ABF,
4. BCE, 5. CDE, 6. BEI,
7. EFG, 8. BCI, 9. GHI,
10. CHI, 11. CGH, 12. AEG,
13. ABH, 14. BFH, and 15. BCH.

8. (D) There are 12 triangles in the figure—
1. ABC, 2. ABD, 3. ACD,
4. ABF, 5. BDF, 6. CDF,
7. CEF, 8. AEF, 9. ABE,
10. ACF, 11. BCF, 12. BCE.

9. (D) In the given figure, there are 6 triangles—



1. ABD, 2. CBD, 3. ADC,
4. DEF, 5. DFG, 6. DEG.

10. (B) In the given figure, the number of squares is 14—

1. ADPM,	2. ABEF,	3. BCGF,
4. CDHG,	5. EFJI,	6. FGKJ,
7. GHLK,	8. IJNM,	9. JKON,
10. KLPO,	11. ACKI,	12. BDLJ,
13. FHPN,	14. EGOM.	

11. (D) In the given figure, there are 28 squares—

1. ABCD,	2. MNOP,	3. EFRQ,
4. SGHT,	5. IJVU,	6. KLXW,
7. MQYX,	8. QRZY,	9. RNSZ,
10. STϕZ,	11. + UVθ,	12. θVPW,
13. θWXY,	14. ψTOU,	15. θXZϕ,
16. AEYL,	17. BFZG,	18. ψHCI,
19. DKθJ,	20. XZUP,	21. YZOV,
22. QNTθ,	23. MRψW,	24. AFψK,
25. EBHθ,	26. LZID,	27. YGCJ,
28. YZψθ.		

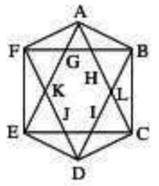
12. (B) In the given figure, there are 44 triangles and 10 squares—

1. AEI,	2. AFI,	3. BFJ,
4. BGJ,	5. CGK,	6. CHK,
7. DHL,	8. DEL,	9. EIO,
10. FIO,	11. FJO,	12. GJO,
13. GKO,	14. HKO,	15. HLO,
16. EOL,	17. AEF,	18. BFG,
19. CGH,	20. DEH,	21. EFO,
22. FGO,	23. GHO,	24. EHO,
25. AEO,	26. AFO,	27. BFO,
28. BGO,	29. CGO,	30. CHO,
31. DHO,	32. EDO,	33. ADO,
34. ABO,	35. BCO,	36. CDO,
37. EFH,	38. EGH,	39. EGH,
40. EFG,	41. ACD,	42. BCD,
43. ABC and	44. ABD.	

The squares are—

1. ABCD,	2. EFGH,	3. AEOF,
4. BFOG,	5. CHOG,	6. DEOH,
7. FIOJ,	8. GKOJ,	9. HKOL,
10. EIOL.		

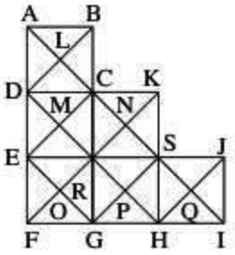
13. (D)



The number of required triangles—

(1) AFG	(2) AGH	(3) AHB	(4) AFH
(5) AGB	(6) AFB	(7) FGK	(8) FKE
(9) EFG	(10) EKJ	(11) FEJ	(12) EJD
(13) KED	(14) FED	(15) EDC	(16) JID
(17) DIC	(18) EID	(19) JDC	(20) ILC
(21) BLC	(22) ICB	(23) BHL	(24) BHC
(25) ABL	(26) ABC	(27) BCD	(28) AEC
(29) BFD	(30) DLC	(31) AFK	(32) AFE

14. (A)



The number of required squares—

= (i) ABCD	(ii) DCER	(iii) ERFG
(iv) CKRS	(v) RSGH,	(vi) SJHI
(vii) DLMC	(viii) EMRO	(ix) CMRN
(x) ROGP	(xi) NRPS	(xii) SPHQ
(xiii) DKFH	(xiv) CEGS	

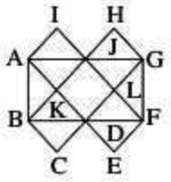
15. (D) The number required rectangles—

= (1) ABER	(2) DCFG	(3) ABGF
(4) CKGH	(5) DKSE	(6) ESHF
(7) RJIG	(8) EFIJ	(9) DLNR
(10) DLSP	(11) DLQH	(12) MCQH
(13) MCSP	(14) RNQH	(15) NOGS
(16) NCEO	(17) MEPG	

16. (A) The number of triangles = 69

= (1) Δ ALB	(2) Δ DLC	(3) Δ ADL
(4) Δ BCL	(5) Δ CDM	(6) Δ EMR
(7) Δ DEM	(8) Δ CMR	(9) Δ EOR
(10) Δ FGO	(11) Δ GOR	(12) Δ EFO
(13) Δ CKN	(14) Δ NRS	(15) Δ CNR
(16) Δ KNS	(17) Δ PRS	(18) Δ GHP
(19) Δ GPR	(20) Δ HPS	(21) Δ JQS
(22) Δ HIQ	(23) Δ HQS	(24) Δ IJQ
(25) Δ CES	(26) Δ DRF	(27) Δ FHR
(28) Δ HKR	(29) Δ DKR	(30) Δ CEG
(31) Δ CGI	(32) Δ ABD	(33) Δ AGM
(34) Δ ABC	(35) Δ BCD	(36) Δ CDR
(37) Δ DER	(38) Δ CER	(39) Δ CDE
(40) Δ EGR	(41) Δ EFG	(42) Δ FGR
(43) Δ EFR	(44) Δ CKR	(45) Δ KSR
(46) Δ CKS	(47) Δ CSR	(48) Δ HRS
(49) Δ GHR	(50) Δ GHS	(51) Δ GRS
(52) Δ HIS	(53) Δ HIJ	(54) Δ HJS
(55) Δ IJS	(56) Δ ACE	(57) Δ BDR
(58) Δ GIS	(59) Δ HJR	(60) Δ DFK
(61) Δ DFH	(62) Δ DHK	(63) Δ FHK
(64) Δ AES	(65) Δ AFI	(66) Δ AFS
(67) Δ CEG	(68) Δ CGS	(69) Δ EGS

17. (C) In the given figure, there are 7 squares—



(1) ABDJ	(2) DFGJ	(3) AIJK
(4) GHJL	(5) DKJL	(6) BCDK
(7) DEFL		

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Number Analogy

In this type of questions, one set of numbers is given and this set is followed by four or five alternatives. The candidate is asked to find out one set from the alternatives, which is followed by same rule as the set in the question is followed.

Example 1. (1, 8, 15)

(A) 3, 10, 16 (B) 12, 30, 48
(C) 4, 10, 17 (D) 19, 27, 34

Answer with Explanation : (B) given set :

$$\underset{+7}{1} \quad \underset{+7}{8,} \quad 15$$

The difference between two consecutive numbers is same.

Alternative (A) :

$$\underset{+7}{3,} \quad \underset{+6}{10,} \quad 16$$

The same rule is not followed here.

Alternative (B) :

$$\underset{+18}{12} \quad \underset{+18}{30} \quad 48$$

Here the difference between two concentive numbers is same. Hence in it same rule is applied. Therefore the answer is (B).

Example 2. (5, 12, 26)

(A) 11, 24, 50 (B) 13, 28, 56
(C) 32, 66, 132 (D) 7, 14, 30

Answer with Explanation : (A) Given set :

$$\underset{\times 2+2}{5} \quad \underset{\times 2+2}{12} \quad 26$$

Alt. (A) $\underset{\times 2+2}{11,} \quad \underset{\times 2+2}{24,} \quad 50$

Exercise

Direction—Which one set is most like the given set ?

1. (8, 18, 37)
   (A) (4, 9, 20) (B) (16, 33, 67)
   (C) (13, 30, 67) (D) (5, 12, 25)
2. (4, 8, 4, 1)
   (A) $(6, 12, 6, \frac{3}{2})$ (B) (5, 10, 5, 2)
   (C) $(2, 4, 2, \frac{1}{4})$ (D) $(8, 12, 6, \frac{3}{2})$
3. (48, 72, 108)
   (A) (64, 96, 144) (B) (24, 36, 72)
   (C) (84, 126, 188) (D) (36, 18, 9)
4. (414, 207, 69)
   (A) (522, 261, 87) (B) (72, 24, 12)
   (C) (728, 363, 51) (D) (48, 24, 12)
5. (5, 12, 26)
   (A) (32, 66, 132) (B) (13, 28, 56)
   (C) (11, 24, 50) (D) (33, 64, 130)
6. (4, 10, 22, 40)
   (A) (3, 15, 25, 33) (B) (2, 8, 20, 38)
   (C) (6, 8, 14, 20) (D) (5, 9, 17, 28)
7. (2, 8, 512)
   (A) (3, 27, 729) (B) (4, 64, 40, 96)
   (C) (1, 1, 1) (D) None of these
8. (26, 5, 2)
   (A) (257, 16, 4) (B) (100, 10, 3)
   (C) (5, 2, 1) (D) (730, 9, 2)
9. (6, 60, 54)
   (A) (7, 70, 63) (B) (8, 80, 64)
   (C) (9, 90, 63) (D) (7, 74, 65)
10. (23, 29, 37)
    (A) (17, 21, 29) (B) (31, 37, 49)
    (C) (41, 17, 55) (D) (13, 15, 23)
11. (1, 7, 19)
    (A) (2, 10, 26) (B) (3, 24, 46)
    (C) (5, 11, 23) (D) (9, 18, 36)
12. (2, 3, 8)
    (A) (5, 6, 14) (B) (10, 22, 47)
    (C) (15, 33, 68) (D) (1, 2, 7)
13. (21, 51, 15)
    (A) (21, 51, 42) (B) (21, 35, 4)
    (C) (21, 91, 35) (D) (21, 30, 51)
14. (256, 64, 16)
    (A) (64, 32, 8) (B) (80, 20, 5)
    (C) (144, 36, 9) (D) (160, 40, 10)
15. (246, 257, 358)
    (A) (143, 253, 246) (B) (233, 343, 345)
    (C) (273, 365, 367) (D) (145, 235, 325)
16. (8, 3, 2)
    (A) 95, 24, 5 (B) (63, 8, 3)
    (C) (168, 15, 4) (D) (10, 6, 5)
17. (8, 9, 10)
    (A) (1, 3, 5) (B) (6, 8, 10)
    (C) (7, 10, 13) (D) (23, 25, 27)
18. (14, 23, 32)
    (A) (12, 21, 30) (B) (13, 21, 29)
    (C) (14, 19, 24) (D) (15, 23, 31)

19. (48, 24, 12)
(A) (46, 22, 11) (B) (44, 22, 10)
(C) (42, 20, 10) (D) (40, 20, 10)

Direction—In each of the following questions find the number which is like the given numbers.

20. (813, 538, 725)
(A) 219 (B) 328
(C) 814 (D) 712

21. (251, 473, 584)
(A) 796 (B) 362
(C) 685 (D) 130

22. (134, 246, 358)
(A) 372 (B) 470
(C) 572 (D) 684

23. (282, 354, 444)
(A) 255 (B) 336
(C) 417 (D) 453

24. (363, 489, 579)
(A) 281 (B) 382
(C) 471 (D) 562

25. (957, 777, 876)
(A) 999 (B) 697
(C) 979 (D) 894

Answers with Explanations

1. (D) Given set : $8 \underset{\times 2+2}{\_\_} 18 \underset{\times 2+1}{\_\_} 37$

Set (D) : $5 \underset{\times 2+2}{\_\_} 12 \underset{\times 2+1}{\_\_} 25$

2. (A) Given Set : $4 \underset{\times 2}{\_\_} 8 \underset{\times \frac{1}{2}}{\_\_} 4 \underset{\times \frac{1}{4}}{\_\_} 1$

Set (A) : $6 \underset{\times 2}{\_\_} 12 \underset{\times \frac{1}{2}}{\_\_} 6 \underset{\times \frac{1}{4}}{\_\_} 3/2$

3. Given set : $48 \underset{\times \frac{3}{2}}{\_\_} 72 \underset{\times \frac{3}{2}}{\_\_} 108$

Set (A) : $64 \underset{\times \frac{3}{2}}{\_\_} 96 \underset{\times \frac{3}{2}}{\_\_} 144$

4. (A) Given set : $414 \underset{\times \frac{1}{2}}{\_\_} 207 \underset{\times \frac{1}{3}}{\_\_} 69$

Set (A) : $522 \underset{\times \frac{1}{2}}{\_\_} 261 \underset{\times \frac{1}{3}}{\_\_} 87$

5. (C) $5 \underset{\times 2+2}{\_\_} 12 \underset{\times 2+2}{\_\_} 26$

Set (C) : $11 \underset{\times 2+2}{\_\_} 24 \underset{\times 2+2}{\_\_} 50$

6. (B) Given set : $4 \underset{+6}{\_\_} 10 \underset{+12}{\_\_} 22 \underset{+18}{\_\_} 40$

Set (B) : $2 \underset{+6}{\_\_} 8 \underset{+12}{\_\_} 20 \underset{+18}{\_\_} 38$

7. (C) Given set : $2 \underset{(2)^3=8}{\_\_} 8 \underset{(8)^3=\sqrt{512}}{\_\_} 512$

Set (C) : $1 \underset{(1)^3=1}{\_\_} 1 \underset{(1)^3=1}{\_\_} 1$

8. (C) Given set : $26 \underset{\sqrt{26-1}=5}{\_\_} 5 \underset{\sqrt{5-1}=2}{\_\_} 2$

Set (C) : $5 \underset{\sqrt{5-1}=2}{\_\_} 2 \underset{\sqrt{2-1}=1}{\_\_} 1$

9. (A) Given Set : $6 \underset{\times 10}{\_\_} 60 \underset{\times \frac{9}{10}}{\_\_} 54$

Set (A) : $7 \underset{\times 10}{\_\_} 70 \underset{\times \frac{9}{10}}{\_\_} 63$

10. (C) Given Set : $23 \underset{+6}{\_\_} 29 \underset{+8}{\_\_} 37$

Set (C) : $41 \underset{+6}{\_\_} 47 \underset{+8}{\_\_} 55$

11. Given Set : $1 \underset{+6}{\_\_} 7 \underset{+12}{\_\_} 19$

Set (C) : $5 \underset{+6}{\_\_} 11 \underset{+12}{\_\_} 23$

12. (A) Given Set : $2 \underset{\times 1+1}{\_\_} 3 \underset{\times 2+2}{\_\_} 8$

Set (A) : $5 \underset{\times 1+1}{\_\_} 6 \underset{\times 2+2}{\_\_} 14$

13. (C) In the given set if first number is added to double of the third number, the result is the middle number, *i.e.*, $21 + 2 \times 15 = 21 + 30 = 51$ (middle number)
Set (C) 21, 91, 35
$21 + 2 \times 35 = 21 + 70 = 90$ (middle number)

14. (C) In the given set each term is a perfect square. Similarly in set (C) each terms is a perfect square.

15. (C) The sum of all the three digits of terms in the given set are 3, 5 and 7 respectively
i.e. $2 + 4 + 6 = 12 \rightarrow 1 + 2 = 3$
$2 + 5 + 7 = 14 \rightarrow 1 + 4 = 5$
$3 + 5 + 8 = 16 \rightarrow 1 + 6 = 7$
In set (C) $2 + 7 + 3 = 12 \rightarrow 1 + 2 = 3$
$3 + 6 + 5 = 14 \rightarrow 1 + 4 = 5$

16. (B) Given Set : $8 \underset{\sqrt{8+1}=3}{\_\_} 3 \underset{\sqrt{3+1}=2}{\_\_} 2$

Set (B) : $63 \underset{\sqrt{63+1}=8}{\_\_} 8 \underset{\sqrt{8+1}=3}{\_\_} 3$

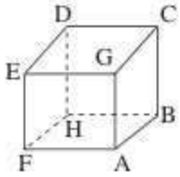
Continued on Page 206

Dice

Dice is a cube. In cube there are 6 faces. Numbers 1 to 6 are written on the faces. Only one number from 1 to 6 is written on one face. Sometimes faces are coloured and black dots from 1 to 6 are marked.

Some Important Points—

1. There are 6 faces in the cube—ABCG, GCDE, DEFH, BCDH, AGEF and ABHF.

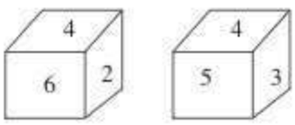


2. Always four faces are adjacent to one face.
3. Opposite of ABCG is DEFH and so on.
4. CDEG is the upper face of the cube.
5. ABHF is the bottom of the cube.

There are certain rules. With the help of these rules questions on dice can easily determined.

Rule No. 1. Two opposite faces cannot be adjacent to one another.

Example.

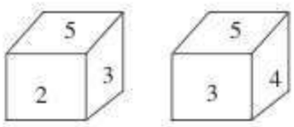


Two different positions of a dice are shown above. Which number will appear on the face opposite to the face with number 4 ?

Solution : Faces with four numbers 6, 2, 5 and 3 are adjacent to the face with No. 4. Hence the faces with no. 6, 2, 5 and 3 cannot be opposite to the face with no. 4. Therefore the remaining face with no. 1 will be opposite to the face with no. 4.

Rule No. 2. If two different positions of a dice are shown and one of the two common faces is in same position then of the remaining faces will be opposite to each other.

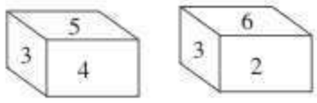
Example. Two different positions of a dice are shown below.



Here in both shown positions two faces 5 and 3 are common. The remaining faces 2 and 4. Hence the number on the face opposite to the face with number 2 is 4.

Rule No. 3. If in two different positions of dice, the position of a common face be the same, then each of the opposite faces of the remaining faces will be in the same position.

Example.

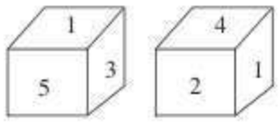


Here in both positions of common (3) is same.

$\therefore$ Opposite of 5 is 6 and opposite of 4 is 2.

Rule No. 4. If in two different positions of a dice, the position of the common face be not the same, then opposite face of the common face will be that which is not shown on any face in these two positions. Besides, the opposite faces of the remaining faces will not be the same.

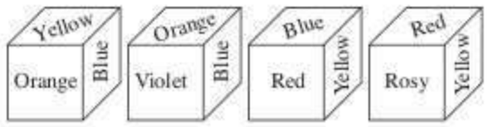
Example.



Here in two positions of a dice the face with number 1 is not in same position. The face with number 6 is not shown. Hence the face opposite to the face with number (1) is (6). Besides the opposite face of (3) will be the face with number (2) and opposite face to face (5) will be the face with number (4).

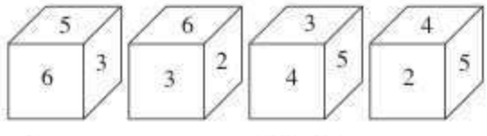
Exercise

1. In the following which colour is opposite to yellow ?



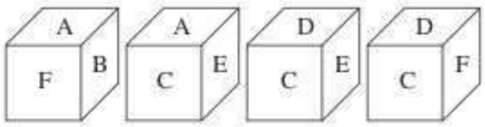
(A) Violet (B) Red
(C) Rosy (D) Blue

2. In this question 4 positions of a dice are shown. Which number of the face will be opposite to the face with number 3 ?



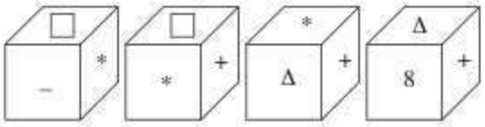
(A) 1 (B) 2
(C) 4 (D) 5

3. Four positions of a cube are shown below. Which letter will be on the face opposite to the face with 'A' ?



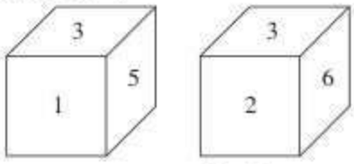
(A) D (B) B
(C) C (D) F

4. Which symbol will be on the face opposite to the face with symbol * ?



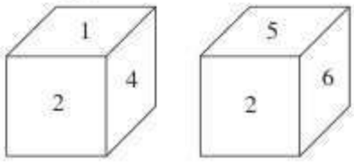
(A) □ (B) Δ
(C) 8 (D) +

5. Two positions of a dice are shown below. Which number will appear on the face opposite to the face with the number 5 ?



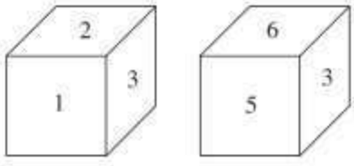
(A) 2/6 (B) 2
(C) 6 (D) 4

6. When the digit 5 is on the bottom then which number will be on its upper surface ?



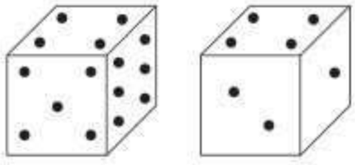
(A) 1 (B) 3
(C) 4 (D) 6

7. Which digit will appear on the face opposite to the face with number 4 ?



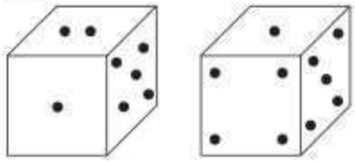
(A) 3 (B) 5
(C) 6 (D) 2/3

8. Here two positions of a dice are shown. If there are two dots in the bottom, then how many dots will be on the top ?



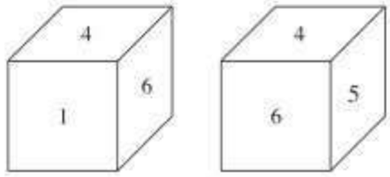
(A) 2 (B) 3
(C) 5 (D) 6

9. Observe the dots on a dice (one to six dots) in the following figures. How many dots are contained on the face opposite to the containing four dots ?



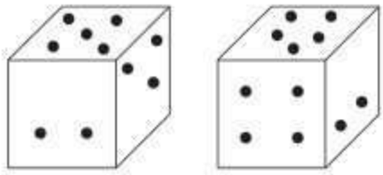
(A) 2 (B) 3
(C) 5 (D) 6

10. Two positions of a dice are shown below. When number 'one' is on the top. Which number will be at the bottom ?



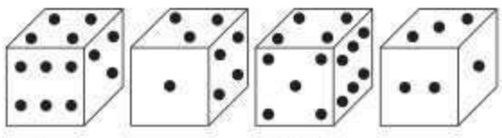
(A) 3 (B) 5
(C) 2 (D) 6

11. Two positions of a dice are shown below. When 3 points are at the bottom, how many points will be at the top ?



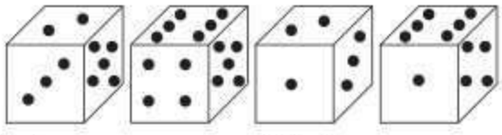
(A) 2 (B) 5
(C) 4 (D) 6

12. How many points will be on the face opposite to the face which contains 3 points ?



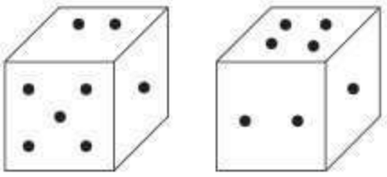
(A) 2 (B) 4
(C) 5 (D) 6

13. How many points will be on the face opposite to face which contains 2 points ?



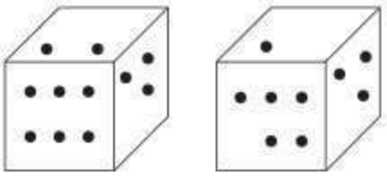
(A) 1 (B) 5
(C) 4 (D) 6

14. Two positions of a dice are shown below. How many points will appear on the opposite to the face containing 5 points ?



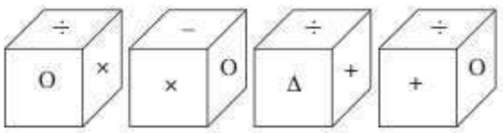
(A) 3 (B) 1
(C) 2 (D) 4

15. Two positions of a dice are shown below. How many points will be on the top when 2 points are at the bottom ?



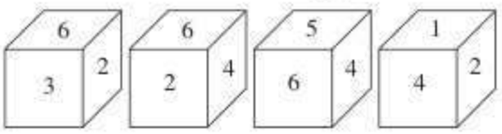
(A) 6 (B) 5
(C) 1 (D) 4

16. Here 4 positions of a cube are shown. Which sign will be opposite to '+' ?



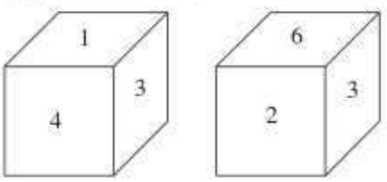
(A) ÷ (B) –
(C) × (D) Δ

17. Which number is on the face opposite to 6 ?



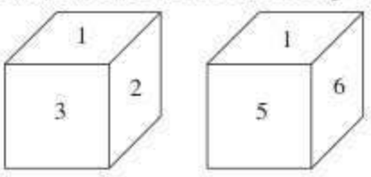
(A) 4 (B) 1
(C) 2 (D) 3

18. Two positions of a cubical block are shown. When 5 is at the top which number will be at the bottom ?



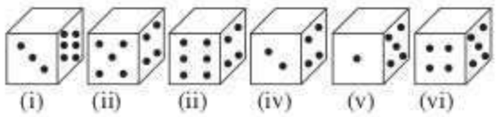
(A) 1 (B) 2
(C) 3 (D) 4

19. Two positions of a cube with its surfaces numbered are shown below. When the surface 4 touch the bottom, what surface will be on the top ?



(A) 1 (B) 2
(C) 5 (D) None of these

Directions— (Q. 20–24) Six dice with their upper faces erased are as shows.



The sum of the numbers of dots on the opposite face is 7.

20. If even numbered dice have even number of dots on their top faces, then what would be the total number of dots on the top faces of their dice ?

(A) 12 (B) 14
(C) 18 (D) 24

21. If the odd number dice have even number of dots on their top faces, then what would be the total number of dots on the top faces of their dice ?

(A) 8 (B) 10
(C) 12 (D) 14

22. If dice (i), (ii) and (iii) have even number of dots on their Bottom faces and the dice (iv), (v) and (vi) have odd number of dots on their top faces, then what would be the difference in the total number of dots on top faces between their two sets ?

(A) 0 (B) 2
(C) 4 (D) 6

23. If the dice (i), (ii) and (iii) have even number of dots on their bottom faces then what would be the total number of dots on their top faces ?

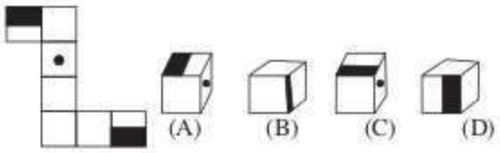
(A) 7 (B) 11
(C) 12 (D) 14

24. If the even number of dice have odd number of dots on their top faces and odd numbered of dice have even of dots on their bottom faces, then what would be the total number of dots on their top faces ?

(A) 12 (B) 14
(C) 16 (D) 18

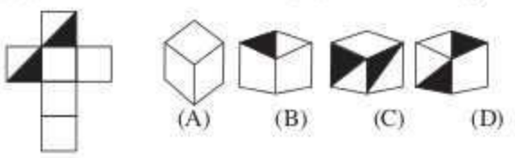
Directions— (Q. 25–30) The figure given on the left hand side in each of the following questions is folded to form a box. Choose from among the alternatives (1), (2), (3) and (4) the boxes that is similar to the box formed.

25.

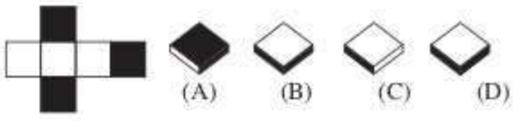


(A) 1 and 2 only (B) 2 and 3 only
(C) 1, 2, 3 and 4 (D) 2 and 4 only

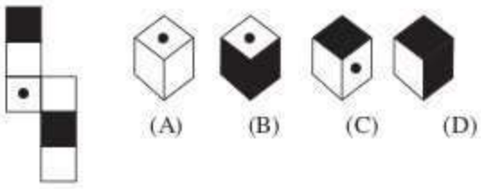
26.



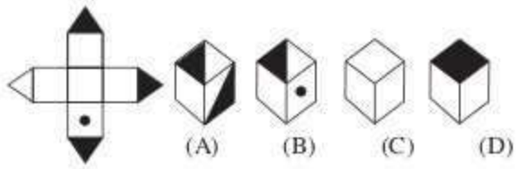
(A) 1 and 4 only (B) 3 and 4 only
(C) 1 and 2 only (D) 2 and 3 only

27. 

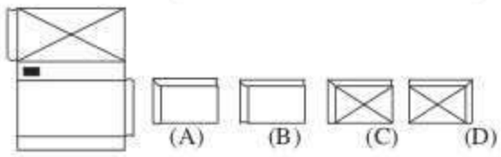
(A) 1 and 3 only (B) 2 and 4 only
(C) 2 and 4 only (D) 1 and 4 only

28. 

(A) 2 and 3 only (B) 1, 3 and 4 only
(C) 2 and 4 only (D) 1 and 4 only

29. 

(A) 1 and 2 only (B) 2 and 4 only
(C) 2 and 3 only (D) 1 and 4 only

30. 

(A) (B)
(C) (D)

Answers with Explanations

1. (A) The colours adjacent to yellow are, orange, blue, red and rosy. Hence violet will be opposite to yellow.
2. (A) The numbers of the adjacent faces to the face with number 3 are 5, 6, 2 and 4.
   Hence the face with number (1) will be opposite to the face with number (3).
3. (A) The letters of the adjacent faces to the face with letter A, are B, F, C and E. Hence D is the letter of the face opposite to the face with letters (A).
4. (C) The symbols of the adjacent faces to the face with symbol * are □, −, + and Δ. Hence the required symbol is 8.
5. (C) According to the rule no. (3) common faces with number 3, are in same positions. Hence the number of the opposite face to face with number 5 will be 6.
6. (A) According to the rule no. (3), common faces with number 2 are in same positions. Hence when the digits 5 is on the bottom then 1 will on the upper surface.
7. (A) Here the common faces with number 3, are in same positions. Hence 6 is opposite to 2 and 5 is opposite to 1. Therefore 4 is opposite to 3.
8. (C) Here the common faces with 4 dots are in same positions. Hence 2 will be opposite to 5.
9. (A) Here one of two common faces (5) is in the same position, then according to the rule no. (2) the remaining face with dots 4 will be opposite to face with dots 2.
10. (B) According to the rule (2) when 'one' is at the top, then '5' will be at the bottom.
11. (C) According to the rule (2) when 3 points are at the bottom then 4 points will be at the top.
12. (C) The adjacent faces to the face with 3 points have 2, 1, 4 and 6 points. Hence on the face which is opposite to the face which contains 3 points, there will be 5 points.
13. (D) In first two positions of dice one common face containing 5 is same. Therefore according to the rule no. 3 the face opposite to the face which contains 2 point, will contain 6 points.
14. (D) In these two positions one of the common face having 1 point is in the same position. Therefore according to rule (2). There will be 4 points on the reqd. face.
15. (D) In these 2 positions of a dice, one common face having points 3 is in the same position. Hence according to rule (3), there will be 4 points on the regd. face.
16. (C) From position I and III common face with ÷ is in the same position. Hence according to rule (3) the opposite is X.
17. (B) As the numbers 2, 3, 4 and 5 are adjacent to 6. Hence the number on the face opposite to '6' is 1.
18. (C) In these 2 positions one common face with no. 3, is in same position. Hence according to the rule no. 3, 1 is opposite to 6 and 4 is opposite to 2. Therefore 5 is opposite to 3.
19. (A) In these 2 positions one common face with number 1 is in the same position. Hence according to the rule no. 3, 2 is opposite to 6 and 3 is opposite to 5. Therefore opposite to 4 is 1.
20. (C) Even numbered dice are : II, IV and VI
    No. of dots on the top face of II dice = 6
    No. of dots on the top face of (IV) dice = 6
    and " " " (VI) " = 6
    ∴ Reqd. total = 6 + 6 + 6 = 18
21. (A) Odd numbered dice are : (ii), (iii) and (v). No. of dots on the top faces of these dice are 2, 2 and 6 respectively.
    ∴ Reqd. total = 2 + 2 + 4 = 8
22. (D) No. of dots on the top faces of the dice (i), (ii) and (iii) are 5, 1 and 5 respectively
    ∴ Total of these numbers = 5 + 1 + 5 = 11
    No. of dots on the top faces of the dice (iv), (v) and (vi) are 1, 3 and 1 respectively.
    ∴ Total of there numbers = 1 + 3 + 1 = 5
    ∴ Reqd. difference = 11 − 5 = 6
23. (B) No. of dots on the top faces of dice (i), (ii) and (iii) are 5, 1 and 5 respectively.
    ∴ Reqd. total = 5 + 1 + 5 = 11
24. (C) No. of dots on the top faces of dice (ii), (iv) and (vi) are 1, 1 and 1 respectively
    and No. of dots on the top face of dice (i), (iii) and (v) are 5, 5 and 3 respectively.
    ∴ Reqd. total = 5 + 5 + 3 + 1 + 1 + 1
    = 16
25. (C) 26. (A) 27. (A) 28. (B) 29. (C) 30. (A)

Cube and Cuboid

1. In a cube or a cuboid there are six faces in each.
2. In a cube length, breadth and height are same while in cuboid these are different.
3. In a cube the number of unit cubes = $(\text{side})^3$ and in cuboid the number of unit cube = $(l \times b \times h)$.

Example 1. A cube of each side 4 cm, has been painted black, red and green on pairs of opposite faces. It is then cut into small cubes of each side 1 cm. Then find—

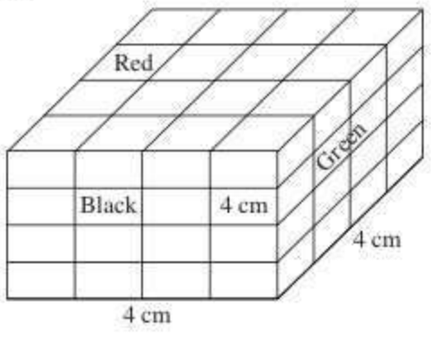
1. How many small cubes will be there ?
2. How many small cubes will have three faces painted ?
3. How many small cubes will have only two faces painted ?
4. How many small cubes will have only one face painted ?
5. How many small cubes will have no faces painted ?
6. How many small cubes will have only two faces painted black and green and all other faces unpainted ?
7. How many small cubes will have only two faces painted green and red.
8. How many small cubes will have only two faces painted black and red ?
9. How many small cubes will be only black painted ?
10. How many small cubes will be only red painted ?
11. How many small cubes will be only green painted ?
12. How many small cubes will have atleast one face painted ?
13. How many small cubes will have atleast two faces painted ?

The solution of each question given above, is given below with explanation. Here three faces are visible.

Steps : (1) A cube of each side 4 cm is here.

(2) It is cut into small cubes of each side of 1 cm.

(3) Opposite faces are painted with black, red and green paints.



1. Total no. of small cubes—$(S)^3 = (4)^3 = 64$.

2. No. of small cubes having three faces painted—From the figure it is clear that the small cube having three faces coloured are situated at the corners of the big cube because at these corners only three faces of the big cube meet. Therefore the required number of such cubes is always 8, because there are 8 corners.

3. No. of small cubes having only two faces painted—From the figure it is clear that to each edge of the big cube 4 small cubes are connected and two out of them are situated at the corners of the big cube which have all the three faces painted. Thus, to each edge two small cubes are left which have two faces painted. As the total no. of edges in a cube are 12, hence the no. of small cubes with two faces coloured

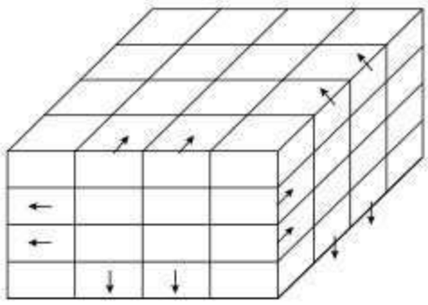
$$= 12 \times 2 = 24.$$

Or

No. of small cubes with two faces coloured

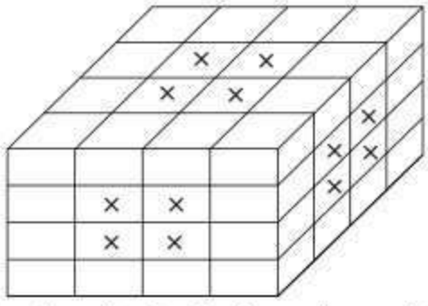
$$= (x - 2) \times \text{No. of edges}$$

where $$x = \frac{\text{Side of big cube}}{\text{Side of small cube}}$$



4. No. of small cubes having only one face painted—The cubes which are painted on one face only are the cubes at the centre of each face of the big cube. Since there are 6 faces in the big cube and each of the face of big cube there will be four such small cubes. Hence, in all there will be 6×4 *i.e.*, 24 such small cubes.

or $(x - 2)^2 \times 6$



5. No. of small cubes having no face painted—No. of such small cubes $= (x - 2)^3$ $\left[\text{Here } x = \frac{4}{1} = 4\right]$

$$= (4 - 2)^3 = 8$$

6. No. of small cubes having two faces painted black and green—There are 4 small cubes in layer II and 4 small cubes in layer III which have two faces painted green and black.

∴ Reqd. no. of such small cubes = 4 + 4 = 8.

7. No. of small cubes having two faces painted green and red.

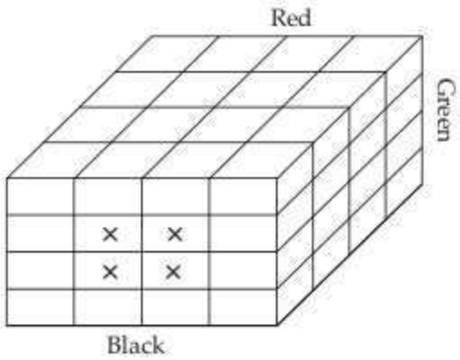
Reqd. no. of such small cubes = 4 + 4 = 8.

8. No. of small cubes having two faces painted black and red = 4 + 4 = 8.

9. No. of small cubes having only black paint. There will be 8 small cubes which have only black paint. Four cubes will be from one side and 4 from the opposite side.

10. No. of small cubes having only red paint

= 4 + 4 = 8



11. No. of small cubes having only green paint

= 4 + 4 = 8

12. No. of small cubes having atleast one face painted

= No. of small cubes having 1 face painted + 2 faces painted + 3 faces painted

= 24 + 24 + 8 = 56

13. No. of small cubes having atleast two faces painted

= No. of small cubes having two faces painted + 3 faces painted

= 24 + 8 = 32

Exercise

Directions—Each of the following questions from 1 to 5 is based on the following informations—

(i) A cuboid shaped wooden block has 6 cm length, 4 cm breadth and 1 cm height.

(ii) Two faces measuring 4 cm × 1 cm are coloured in black.

(iii) Two faces measuring 6 cm × 1 cm are coloured in red.

(iv) Two faces measuring 6 cm × 4 cm are coloured in green.

(v) The block is divided into 6 equal cubes of side 1 cm (from 6 cm side), 4 equal cubes of side 1 cm (from 4 cm side).

1. How many cubes having red, green and black colours on at least one side of the cube will be formed ?
   (A) 16 (B) 12
   (C) 10 (D) 8
   (E) None of these

2. How many small cubes will be formed ?
   (A) 6 (B) 12
   (C) 16 (D) 24
   (E) None of these

3. How many cubes will remain if the cubes having black and green coloured are removed ?
   (A) 4 (B) 8
   (C) 12 (D) 16
   (E) None of these

4. How many cubes will have green colour on two sides and rest of the four sides having no colour ?
   (A) 12 (B) 10
   (C) 8 (D) 4
   (E) None of these

5. How many cubes will have 4 coloured sides and two non-coloured sides ?
   (A) 8 (B) 4
   (C) 16 (D) 10
   (E) None of these

Directions—Each of the questions from 6 to 9 is based on the following information—

(i) There is a cuboid whose dimensions are 4 × 3 × 3 cm.

(ii) The opposite faces of dimensions 4 × 3 are coloured yellow.

(iii) The opposite faces of other dimensions 4 × 3 are coloured red.

(iv) The opposite faces of dimensions 3 × 3 are coloured green.

(vi) Now the cuboid is cut into small cubes of side 1 cm.

6. How many small cubes will have only one face coloured ?
   (A) 10 (B) 12
   (C) 14 (D) 18
   (E) None of these

7. How many small cubes will have only two faces coloured ?
   (A) 12 (B) 24
   (C) 16 (D) 12
   (E) None of these

8. How many small cubes will have no face coloured ?
   (A) 1 (B) 2
   (C) 4 (D) 8
   (E) None of these

9. How many small cubes have three faces coloured ?
   (A) 24 (B) 20
   (C) 16 (D) 12
   (E) None of these

Directions—Each of the questions from 10 to 13 is based on the following informations—

(i) A cuboid shaped wooden block has 4 cm length, 3 cm breadth and 5 cm height.

(ii) Two sides measuring 5 cm × 4 cm are coloured in red.

(iii) Two sides measuring 4 cm × 3 cm are coloured in blue.

(iv) Two sides measuring 5 cm × 3 cm are coloured in green.

(v) Now the block is divided into small cubes of side 1 cm each.

10. How many small cubes will have only one face coloured ?
(A) 12 (B) 28
(C) 22 (D) 16
(E) None of these

11. How many small cubes will have three faces coloured ?
(A) 14 (B) 8
(C) 10 (D) 12
(E) None of these

12. How many small cubes will have no faces coloured ?
(A) None (B) 2
(C) 4 (D) 6
(E) None of these

13. How many small cubes will have two faces coloured with red and green colours ?
(A) 12 (B) 8
(C) 16 (D) 20
(E) None of these

Directions—Each of the questions from 14 to 17 is based on the following informations—

(i) All the faces of cubes are painted with red colour.

(ii) The cubes is cut into 64 equal small cubes.

14. How many small cubes have no faces coloured ?
(A) 24 (B) 8
(C) 16 (D) 0

15. How many small cube have only one face coloured ?
(A) 4 (B) 8
(C) 16 (D) 24

16. How many such small cubes are there whose two adjacent faces are coloured red ?
(A) 0 (B) 8
(C) 16 (D) 24

17. How many small cubes are there whose three faces are coloured ?
(A) 4 (B) 8
(C) 16 (D) 24

18. A cube has been painted red, yellow and green on pairs of opposite faces. The cube is then cut into 64 small cubes. How many small cubes are whose only one face is coloured red ?
(A) 24 (B) 8
(C) 16 (D) 12

Directions—Each of the questions from 19 to 23 is based on the following informations—

All the opposite faces of a big cube are coloured with red, black and green colours. After this it is cut into 64 small equal cubes.

19. How many such small cubes are there whose no faces are coloured ?
(A) 0 (B) 4
(C) 8 (D) 16

20. How many small cubes are there whose only one face is coloured ?
(A) 32 (B) 8
(C) 16 (D) 24

21. How many small cubes are there whose at the most two faces are coloured ?
(A) 48 (B) 8
(C) 28 (D) 24

22. How many small cubes are there whose 3 faces are coloured ?
(A) 4 (B) 8
(C) 16 (D) 24

23. How many small cubes are there where one face is green and other one is either black or red ?
(A) 28 (B) 8
(C) 16 (D) 24

Directions—(Q. 24 and 25) All the faces of a cube are painted with blue colour. Then it is cut into 125 small equal cubes.

24. How many small cubes will be formed having no face coloured ?
(A) 27 (B) 8
(C) 16 (D) 24
(E) 32

25. How many small cubes will be formed having only one face coloured ?
(A) 54 (B) 8
(C) 16 (D) 24
(E) 36

Directions—(Q. 26–29) All the six faces of a cube are coloured with six different colours—black, brown, green, red, white and blue.

(i) Red face is opposite to the black face.

(ii) Green face is between red and black faces.

(iii) Blue face is adjacent to white face.

(iv) Brown face is adjacent to blue face.

(v) Red face is in the bottom.

26. The face opposite to brown is—
(A) Blue (B) White
(C) Green (D) Red

27. Which of the following is adjacent to green ?
(A) Black, white, brown, red
(B) Blue, black, red, white
(C) Red, black, blue, white
(D) None of these

28. Which face is opposite to green ?
(A) Red (B) White
(C) Blue (D) Brown

29. The upper face is—
(A) White (B) Black
(C) Brown (D) None of these

Directions—(Q. 30–34) There are 128 cubes with me which are coloured according to two schemes, *viz*. (i) 64 cubes each having two red adjacent faces and one yellow and other blue on their opposite faces while green on the rest, (ii) 64 cubes each having two adjacent blue faces and one red and other green on their opposite faces, while red on the rest. They are then mixed up.

Now answer the following questions based on the above statement.

30. How many cubes have only one red face each ?
(A) 128 (B) 32
(C) 64 (D) None

31. How many cubes have two adjacent blue faces each ?
(A) 64 (B) 32
(C) 0 (D) 128

32. Which two colours have the same number of faces ?
(A) Red and Yellow (B) Blue and Green
(C) Red and Green (D) Red and Blue

33. How many cubes have atleast two coloured red faces each ?
(A) 0 (B) 32
(C) 64 (D) 128

34. What is the total number of red faces ?
(A) 0 (B) 64
(C) 320 (D) 128

Directions—(Q. 35–39) A cube is cut in two equal parts along a plane parallel to one of its faces. One piece is then coloured red on the two larger faces and green on the remaining, while the other is coloured green on two smaller adjacent faces and red on the remaining. Each is then cut into 32 cubes of same size and mixed up.

Now answer the following questions based on the above statement.

35. How many cubes have no coloured face at all ?
(A) 32 (B) 8
(C) 16 (D) None

36. How many cubes have only one coloured face each ?
(A) 32 (B) 8
(C) 16 (D) 0

37. How many cubes have two red and one green face on each ?
(A) 0 (B) 8
(C) 16 (D) 4

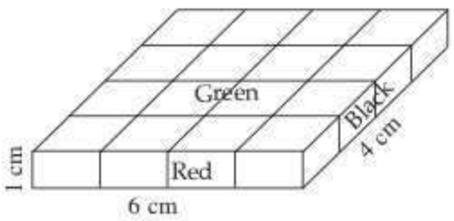
38. How many cubes have each one red and another green ?
(A) 0 (B) 8
(C) 16 (D) 24

39. What is the number of cubes with atleast one green face each ?
(A) 36 (B) 32
(C) 38 (D) 48

40. All the four lateral faces of a solid cube of side 4 cm are coloured with blue colour. Then the cube is cut into small cubes each of side 1 cm. How many small cubes will be such whose only one face is coloured ?
(A) 36 (B) 8
(C) 32 (D) 24

Answers with Explanations

For Q. 1 to 5 :



1. (E) Such cubes are related to the corners of the cuboid. Since the number of corners of the cuboid is 4. Hence, the number of such small cubes is 4.

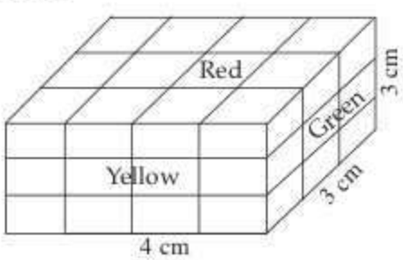
2. (D) No. of small cubes $= l \times b \times h$
$= 6 \times 4 \times 1$
$= 24$

3. (D) No. of small cubes which are black and green are 8 in all. Hence, the number of remaining cubes
$= 24 - 8 = 16$

4. (C) There are 16 small cubes attached to the outer walls of the cuboid. Therefore remaining inner small cubes will be the cubes having two sides green coloured.
So, the reqd. number $= 24 - 16 = 8$

5. (B) Only 4 cubes situated at the corners of the cuboid will have 4 coloured and 2 non-coloured sides.

For Q. 6 to 9 :



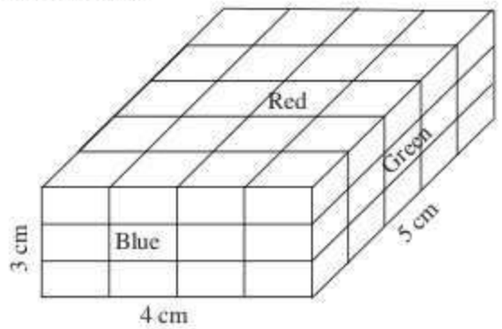
6. (A) No. of small cubes having only one face coloured
$= 2 \times 2 + 2 \times 2 + 2 \times 1$
$= 4 + 4 + 2$
$= 10$

7. (C) No. of small cubes having only two faces coloured
= 6 from the front + 6 from the back + 2 from the left + 2 from the right
= 16

8. (B) No. of small cubes which have no face coloured
$= (4 - 2) \times (3 - 2)$
$= 2 \times 1$
$= 2$

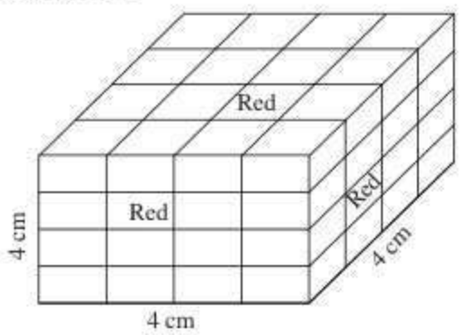
9. (E) Such cubes are related to the corners of the cuboid and there are 8 corners. Hence, the reqd. number is 8.

For Q. 10 to 13 :



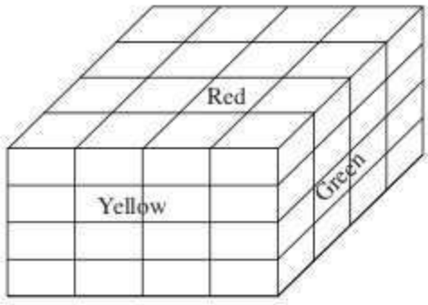
10. (C) 2 from the front + 2 from the back + 3 from the left + 3 from the right + 6 from the top + 6 from the bottom = 22.
11. (B) Such cubes are related to the corners of the cuboid and in the cuboid there are 8 corners. Hence, the reqd. number of small cubes is 8.
12. (D) Reqd. no. of small cubes = $(5-2)(4-2)(3-2)$
$= 3 \times 2 \times 1$
$= 6$
13. (A) Reqd. no. of small cubes
= 6 from top and 6 from bottom
= 12

For Q. 14 to 17 :



There are 64 small cubes. Hence one side of the big cube $= \sqrt[3]{64} = 4$ cm.

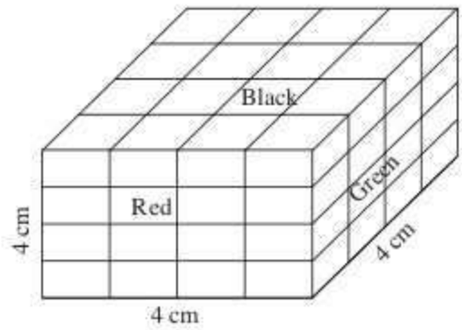
14. (B) No. of small cubes having no face coloured
$= (x-2)^3$
Here, $x = \dfrac{\text{Side of big cube}}{\text{Side of small cube}}$
$= \dfrac{4}{1} = 4$
$\therefore$ Reqd. no. $= (4-2)^3$
$= 8$
15. (D) No. of small cubes having only one face coloured = $(x-2)^2 \times$ No. of faces
$= (4-2)^2 \times 6$
$= 24$
16. (D) No. of small cubes having two adjacent faces coloured red = $(x-2) \times$ No. of edges
$= (4-2) \times 12$
$= 24$
17. (B) No. of small cubes having three faces coloured
= Number of corners
= 8
18. (B)



No. of small cubes having one face coloured red
$= (x-2)^2 \times 6$
$= (4-2)^2 \times 6$
$= 4 \times 6 = 24$

For Q. 19 to 23 :

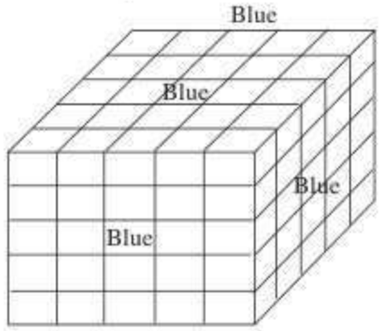
One side of the big cube $= \sqrt[3]{64} = 4$ cm



19. (C) No. of small cubes having no face coloured
$= (x-2)^3$ (Here, $x = 4$)
$= (4-2)^3$
$= 8$
20. (D) No. of small cubes having only one face coloured = 4 from each face
$= 4 \times 6 = 24$
21. (A) No. of small cubes having two faces coloured
$= 8 + 8 + 4 + 4 = 24$
and No. of small cubes having only one face coloured $= 4 \times 6 = 24$
$\therefore$ Total no. of small cubes whose at the most two faces are coloured = 24 + 24
= 48
22. (B) No. of small cubes having three faces coloured
= 1 at each corner
$= 1 \times 8 = 8$
23. (C) No. of small cubes having one face green and the other one is either red or black
$= 8 \times 2$
= 16

For Q. 24 to 25 :

One side of the big cube = $\sqrt[3]{125}$ = 5 cm.

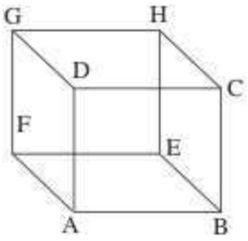


24. (A) No. of small cubes having no face coloured
$= (x-2)^3$ (Here, $x = 5$)
$= (5-2)^3$
$= 27$

25. (A) No. of small cubes having one face coloured
$= (5-2)^2 \times 6$
$= 9 \times 6$
$= 54$

For Q. 26 to 29 :

ABEF → Red
DCHG → Black
ABCD → Green
EFGH → Blue
AFGD → White
BCHC → Brown



26. (B) 27. (A) 28. (C) 29. (B)

30. (D) Out of 128 cubes no cube is such whose only one face is red.

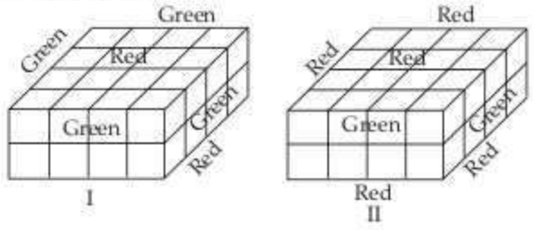
31. (A) Second 64 cubes are such each of whose two faces are blue.

32. (B) First 64 cubes are such each of whose two faces are green and second 64 cubes are such each of whose two faces are blue. Therefore green and blue colours have the same number of faces.

33. (D) 64 and 64 cubes of both types are such who have atleast two coloured faces red each. Therefore, total number of the required cubes is 128.

34. (C) Number of red faces among first 64 cubes
= 128
and Number of red faces among second 64 cubes
= 192
∴ Total number of red faces = 128 + 192
= 320

For Q. 35 to 39 :



35. (D) There is no such cube in all, where all the faces are uncoloured.

36. (C) 8 from I and 8 from II
∴ 8 from each.

37. (D) None from I and 4 from II.

38. (D) 16 from I and 8 from II.

39. (C) 24 from I and 14 from II.

40. (C) There will be 64 small cubes each of side 1 cm. Since blue colour is only on the lateral surface of the big cube, hence the base and top face will be uncoloured. Therefore 8 from top, 8 from bottom, 4 from each lateral face.
∴ Total number of reqd. cubes = 8 + 8 + 16 = 32

Continued from Page 126

26. (E) J × M → J is the brother of M
M ÷ F → M is the father of F
F × T → F is the brother of T
So gender of 'T' is not clear.

27. (A) B × M → B is the brother of M
M ÷ H → M is the father of H
∴ B × M ÷ H → B is the paternal uncle of H

28. (D) M $\xleftarrow{\text{Father}}$ D $\xleftarrow{\text{Sister}}$ K
∴ D is the daughter of M.

29. (A) T $\xleftarrow{\text{Father}}$ D $\xleftarrow{\text{Mother}}$ R
∴ T is the maternal grandfather of R.

30. (D) N – K + M × T → N is the sister of K and K is the father of M and M is brother of T.
∴ M is the nephew of N.

31. (E) H + T ÷ R – D → H is the father of T, T is the mother of R and R is the sister of D. Hence, T is the mother of D.

32. (C)

33. (D) M × T → M is the brother of T
T – J → T is the mother of J
∴ M × T – J → M is the maternal uncle of J

34. (A) J ÷ R → J is the sister of R
R – P → R is the mother of P
P ÷ T → P is the sister of T
∴ P is the niece of J.

35. (B) R × M → R is the brother of M
M + K → M is the father of K
∴ K is the nephew of R.

36. (C) T + J → T is the father of J
J – R → R is the mother of J
∴ T is the grandfather of R.

37. (D)

Matrix

In such questions two matrices are given. There are 25 squares in each of these matrices. Digits and letters are written in these squares. In first row and first column of first matrix digits from 0 to 4 are written while in second matrix digits 5 to 9 are written. In rest of the squares, various letters are written. For example two matrices are given below.

Matrix-I

	0	1	2	3	4
0	H	P	O	N	B
1	B	N	P	H	M
2	O	H	B	P	N
3	P	O	N	B	H
4	N	B	H	O	P

Matrix-II

	5	6	7	8	9
5	A	J	F	S	T
6	T	F	A	J	S
7	J	S	T	F	A
8	F	T	S	A	J
9	S	A	J	T	F

By these matrices a letter is represented by the number of row and then the number of its column. For example P is represented by 23 because the number of row of P is 2 and the number of its column is 3. Similarly J is represented by 97, because for J in second matrix the number of row is 9 while the number of its column is 7. J can also be represented by 56, 75, 89 etc.

In each question a word is given followed by four alternates. In each of these four alternative pairs of digits for these letters are given out of which in only one alternates the pairs of digits are given in the same order in which letters of words are written. The candidate has to find out the correct set of pairs of digits.

Example 1. Find the correct set of pairs of digit for the word **DNML** with the help of the two given matrices.

Matrix-I

	0	1	2	3	4
O	P	Y	Q	D	M
1	Q	D	M	Q	P
2	Y	P	Q	M	Y
3	D	M	D	P	Q
4	M	Y	P	D	Y

Matrix-II

	5	6	7	8	9
5	N	S	R	L	U
6	U	L	N	R	S
7	S	U	R	L	R
8	N	L	R	L	N
9	U	S	N	U	S

(A) 32, 67, 23, 89 (B) 11, 85, 13, 66
(C) 32, 67, 25, 86 (D) 32, 67, 23, 88

Answer with Explanation : (D)

For D, pairs are : 03, 11, 30, 32 and 43.

For N, " " : 55, 67, 85, 89 and 97.

For M, " " : 04, 12, 23, 31 and 40.

and For L, " " : 58, 66, 78, 86 and 88.

By studing carefully these sets, we find that correct set of pairs of digits for DNML is in (D).

Example 2. Find the correct set of pairs letters for the number 5192 with the help of the two given matrices.

Matrix-I

	A	B	C	D	E
A	2	7	3	1	6
B	3	1	2	7	1
C	7	3	6	1	2
D	6	2	1	6	3
E	7	3	6	2	7

Matrix-II

	M	N	O	P	Q
M	5	4	8	9	0
N	0	8	9	4	5
O	9	5	8	0	4
P	5	0	4	9	8
Q	4	8	9	5	0

(A) ON, CD, MP, DE (B) MN, CB, OM, DB
(C) ON, CD, MP, CE (D) QP, BE, NP, DA

Answer with Explanation : (C)

Letters-pairs for 5 = MM, NQ, ON, PM and QP
" " " 1 = BB, AD, CD, DC and BE
" " " 9 = MP, OM, NO, PP and QO
" " " 2 = AA, BC, CE, DB and ED

By studying carefully these sets, we find that correct set of pairs of letters for 5192 is in (C).

Exercise 1

Directions—(Q. 1–3) In each of the following questions one word is given. Find out the correct set of pairs of digits with the helps of the given matrices.

Matrix-I

	0	1	2	3	4
0	I	A	C	B	E
1	C	E	I	A	B
2	A	C	I	E	B
3	E	B	A	I	C
4	B	E	C	A	I

Matrix-II

	5	6	7	8	9
5	T	S	H	M	R
6	M	R	T	S	H
7	R	T	M	H	S
8	H	M	S	R	T
9	S	T	R	H	M

1. BARE
(A) 12, 41, 67, 41 (B) 03, 20, 75, 41
(C) 30, 32, 59, 21 (D) 01, 23, 97, 33

2. HEAT
(A) 78, 41, 01, 55 (B) 85, 31, 32, 79
(C) 99, 11, 33, 75 (D) 65, 13, 14, 69

3. BEST
(A) 01, 21, 87, 67 (B) 30, 33, 89, 79
(C) 24, 11, 87, 67 (D) 31, 41, 87, 85

Directions—(Q. 4–8) In each of the following questions one word is given. Find out the correct set of pairs of digits with the help of the given matrices.

Matrix-I

	0	1	2	3	4
0	C	A	E	D	B
1	B	D	C	E	A
2	A	C	B	E	D
3	C	D	E	B	A
4	A	B	C	D	E

Matrix-II

	5	6	7	8	9
5	Q	P	O	M	N
6	M	Q	P	N	O
7	P	N	O	Q	M
8	O	Q	N	P	M
9	N	O	Q	M	P

4. MCQA

(A) 65, 21, 66, 34 (B) 65, 23, 67, 34
(C) 76, 21, 67, 34 (D) 68, 43, 59, 67

5. COBM

(A) 42, 57, 41, 66 (B) 42, 57, 41, 58
(C) 21, 57, 41, 56 (D) 42, 56, 41, 58

6. EODA

(A) 44, 57, 11, 33 (B) 44, 57, 11, 31
(C) 45, 57, 11, 34 (D) 44, 57, 11, 34

7. PODA

(A) 88, 96, 24, 40 (B) 88, 95, 24, 40
(C) 87, 96, 24, 40 (D) 86, 95, 24, 40

8. POCA

(A) 98, 67, 43, 59 (B) 99, 85, 30, 14
(C) 99, 87, 30, 14 (D) 99, 85, 30, 24

Directions—(Q. 9–13) Find the correct set of pairs of numbers for the word given in each questions from 9 to 13, with the help of the two given matrices.

Matrix-I

	0	1	2	3	4
0	A	C	E	D	K
1	D	K	A	C	E
2	C	E	D	K	A
3	K	A	C	E	D
4	E	D	K	A	C

Matrix-II

	5	6	7	8	9
5	T	O	P	N	L
6	N	L	T	O	P
7	O	P	N	L	T
8	L	T	O	P	N
9	P	N	L	T	O

9. AND

(A) 13, 64, 02 (B) 31, 65, 04
(C) 31, 56, 03 (D) 31, 65, 03

10. TONE

(A) 55, 65, 58, 21 (B) 56, 65, 85, 12
(C) 55, 56, 58, 21 (D) 55, 56, 85, 12

11. NEPA

(A) 58, 20, 75, 31 (B) 58, 02, 57, 31
(C) 58, 20, 75, 13 (D) 85, 02, 75, 12

12. KAN

(A) 04, 31, 96 (B) 40, 13, 69
(C) 03, 31, 96 (D) 04, 13, 96

13. POET

(A) 95, 56, 01, 57 (B) 59, 65, 20, 55
(C) 95, 65, 01, 55 (D) 95, 56, 02, 55

Directions—(Q. 14–18) Find the correct set of pairs of digits for the word given in each question from 14 to 18, with the help of the two given matrices.

Matrix-I

	0	1	2	3	4
0	A	C	E	D	K
1	D	K	A	C	E
2	C	E	D	K	A
3	K	A	C	E	D
4	E	D	K	A	C

Matrix-II

	5	6	7	8	9
5	T	O	P	N	L
6	N	L	T	O	P
7	O	P	N	L	T
8	L	T	O	P	N
9	P	N	L	T	O

14. CELO

(A) 02, 20, 85, 99 (B) 20, 02, 85, 99
(C) 20, 20, 85, 98 (D) 20, 02, 85, 96

15. NATE

(A) 58, 00, 57, 34 (B) 00, 58, 55, 33
(C) 58, 01, 55, 34 (D) 58, 00, 55, 33

16. POND

(A) 57, 65, 97, 41 (B) 57, 56, 93, 41
(C) 57, 56, 96, 41 (D) 57, 69, 56, 41

17. DOTT

(A) 03, 56, 86, 98 (B) 03, 57, 68, 95
(C) 03, 65, 86, 96 (D) 30, 56, 68, 89

18. CAPE

(A) 20, 00, 96, 02 (B) 20, 00, 95, 02
(C) 00, 20, 95, 20 (D) 20, 01, 95, 03

Directions—(Q. 19–23) Find the correct set of pairs of digits for the word given in each question from 19 to 23, with the help of the two given matrices.

Matrix-I

	0	1	2	3	4
0	D	O	B	A	I
1	O	B	A	I	D
2	B	A	I	D	O
3	A	I	D	O	B
4	I	D	O	B	A

Matrix-II

	5	6	7	8	9
5	W	N	R	M	L
6	N	R	M	L	W
7	R	M	L	W	N
8	M	L	W	N	R
9	L	W	N	R	M

19. WARD

(A) 67, 44, 75, 32 (B) 55, 32, 66, 41
(C) 68, 30, 57, 23 (D) 78, 12, 89, 14

20. NABD

(A) 97, 21, 43, 33 (B) 66, 44, 34, 14
(C) 79, 21, 11, 41 (D) 89, 30, 20, 23

21. BLAM

(A) 34, 68, 21, 57 (B) 33, 77, 44, 76
(C) 12, 86, 21, 67 (D) 20, 95, 30, 99

22. WOLB

(A) 69, 42, 68, 11 (B) 87, 44, 86, 84
(C) 88, 10, 68, 34 (D) 97, 33, 95, 21

23. DAWN

(A) 41, 23, 55, 56 (B) 32, 44, 76, 79
(C) 23, 30, 68, 96 (D) 14, 12, 78, 97

Directions—(Q. 24–30) Find the correct set of pairs of digits for the word given in each question from 24 to 30, with the help of the two given matrices.

Matrix-I

	0	1	2	3	4
0	R	S	T	U	V
1	V	R	S	T	U
2	T	V	U	R	S
3	S	U	V	T	R
4	U	T	R	V	S

Matrix-II

	5	6	7	8	9
5	A	B	C	D	E
6	E	B	C	D	A
7	B	C	D	A	E
8	C	D	A	B	E
9	E	C	B	A	D

24. DUVE

(A) 58, 14, 21, 59 (B) 77, 03, 22, 79
(C) 86, 40, 32, 78 (D) 68, 04, 78, 32

25. SAT

(A) 44, 56, 20 (B) 24, 78, 21
(C) 12, 98, 33 (D) 01, 69, 14

26. STUB

(A) 44, 02, 03, 66 (B) 24, 21, 14, 98
(C) 12, 33, 32, 89 (D) 01, 14, 75, 31

27. BEST

(A) 97, 55, 30, 41 (B) 66, 59, 30, 41
(C) 75, 59, 03, 34 (D) 56, 89, 01, 34

28. CAST

(A) 85, 55, 01, 13 (B) 85, 55, 02, 03
(C) 85, 65, 01, 13 (D) 58, 55, 01, 13

29. ACT

(A) 55, 77, 20 (B) 55, 76, 21
(C) 55, 76, 20 (D) 56, 76, 20

30. RAT

(A) 11, 88, 41 (B) 11, 87, 34
(C) 01, 87, 41 (D) 11, 87, 20

Exercise 2

Directions—(Q. 1–5) Find the correct set of pairs of letters for the number given in each question from 1 to 5, with the help of the two given matrices.

Matrix-I

	A	B	C	D	E
A	7	5	9	8	6
B	6	8	7	5	9
C	5	6	9	7	8
D	6	9	8	5	7
E	7	9	5	8	6

Matrix-II

	L	M	N	O	P
L	0	1	2	3	4
M	2	4	0	1	3
N	1	3	2	4	0
O	3	4	1	0	2
P	2	0	4	3	1

1. 0 7 8 6

(A) LL, BC, ED, DF (B) NP, CD, CE, BB
(C) PM, EA, CD, DA (D) OO, CD, DC, EE

2. 2 8 5 9

(A) ML, DD, CA, DB (B) OP, AD, DD, DB
(C) NN, CE, AC, CA (D) BL, ED, DD, ED

3. 0 1 4 3

(A) NP, MO, PN, OL (B) NM, LM, NO, PO
(C) MN, OM, MO, OP (D) LO, MO, NN, PO

4. 0 8 4 6

(A) NP, CE, LP, BB (B) LL, BC, ON, DE
(C) OO, AD, PN, EE (D) NP, AD, NO, BC

5. 9 7 5 3

(A) DB, CD, BD, EE (B) BE, EA, CA, NM
(C) BE, ED, AC, LO (D) CC, DE, DD, OP

Directions—Find the correct set of pairs of letters for the number given in each question from 6 to 10, with the help of the two given matrices.

Matrix-I

	E	F	G	H	I
E	4	0	1	3	2
F	2	4	0	2	3
G	1	0	4	2	0
H	3	4	2	0	1
I	0	3	2	4	1

Matrix-II

	J	K	L	M	N
J	7	9	5	8	6
K	6	9	7	6	5
L	5	8	6	9	7
M	8	5	7	9	5
N	9	5	6	8	7

6. 4 9 8 3

(A) EK, JK, JM, EH (B) FF, KL, LK, FI
(C) GG, KK, MJ, FH (D) HF, NJ, NM, HF

7. 0 5 2 4

(A) FG, KN, HF, GG (B) GF, LJ, FE, FG
(C) GI, NK, GH, HG (D) EF, JL, EI, IH

8. 9 7 3 6

(A) JL, JJ, FI, NL (B) NJ, ML, IF, LL
(C) JK, KL, LL, HE (D) KK, LN, HE, LM

9. 4 5 5 3

(A) IH, NK, JM, EH (B) GG, LJ, EH, KN
(C) HF, MK, KN, HE (D) FF, KN, MK, IG

10. 8 9 4 3

(A) LK, NJ, HI, FI (B) MJ, MM, IH, IE
(C) JM, KK, EE, HE (D) HF, MK, KN, HE

Directions—(Q. 11–15) Find the correct set of pairs of letters for the number given in each question from 11 to 15, with the help of the two given matrices.

Matrix-I

	V	W	X	Y	Z
V	0	2	4	3	1
W	4	0	2	1	3
X	4	1	0	2	3
Y	1	4	3	0	2
Z	4	3	1	2	0

Matrix-II

	P	Q	R	S	T
P	5	7	9	8	6
Q	9	6	5	7	8
R	7	5	8	6	9
S	8	5	7	9	6
T	6	9	8	5	7

11. 2 0 0 6

(A) YZ, ZZ, WW, TS (B) XW, WW, XX, PT
(C) YZ, YY, VV, RQ (D) WX, WW, YY, ST

12. 8 9 4 6

(A) TR, SS, XV, ST (B) SP, RT, YW, QT
(C) RP, SS, VX, QQ (D) SP, WY, WV, QQ

13. 1 9 8 9

(A) YV, SS, P$, QP (B) XZ, TR, RR, RP
(C) XW, PQ, SP, TS (D) WY, RT, PT, TQ

14. 2 3 0 3

(A) YZ, XY, XX, ZW (B) WX, VY, WW, YX
(C) ZY, ZX, YY, YV (D) WX, WZ, ZZ, ZX

15. 1 9 0 6

(A) XZ, RT, VV, QQ (B) YV, QT, WW, RS
(C) ZX, SS, YY, PT (D) WY, QP, YZ, TS

Directions—(Q. 16–20) Find the correct set of pairs of letters for the number given each questions for 16 to 20, with the help of the two given matrices.

Matrix-I

	O	P	Q	R	S
O	9	6	8	7	5
P	6	7	5	8	9
Q	7	5	6	9	8
R	5	9	8	6	7
S	8	7	5	9	6

Matrix-II

	T	U	V	W	X
T	1	3	0	2	4
U	0	4	2	3	1
V	4	3	1	0	2
W	2	1	3	4	0
X	3	4	0	1	2

16. 1 4 8 0

(A) UX, UU, PS, UT (B) TT, TX, OQ, TV
(C) VV, VT, SP, XW (D) WU, WW, QS, VX

17. 5 3 9 2

(A) QP, TU, PS, XT (B) PQ, UW, RP, TX
(C) OS, TU, OO, TW (D) SQ, UV, QR, XW

18. 9 8 0 0

(A) OO, OQ, TV, UT (B) PS, RP, XV, WX
(C) QR, PR, VT, TV (D) RP, QS, VW, RQ

19. 1 9 8 9

(A) WU, RP, RQ, RS (B) UW, SR, QO, WX
(C) VW, PS, OQ, UV (D) XW, SR, RQ, QR

20. 2 1 9 0

(A) UV, UX, SP, XV (B) XX, XW, QR, VW
(C) VX, VV, PS, RS (D) WT, WU, RQ, WX

Directions—(Q. 21–25) Find the correct set of pairs of letters for the number given in each question for 21 to 25, with the help of the two given matrices.

Matrix-I

	A	B	C	D	E
A	0	4	1	3	2
B	2	3	1	0	4
C	1	4	2	0	3
D	4	2	3	0	1
E	3	1	0	4	2

Matrix-II

	F	G	H	I	J
F	6	5	9	8	7
G	9	6	5	7	8
H	5	8	9	6	7
I	7	6	5	8	9
J	8	9	6	5	7

21. 9 4 6 1

(A) IJ, DA, IG, BE (B) GF, CB, HI, ED
(C) JG, ED, JH, EB (D) HH, BE, GG, IG

22. 3 2 5 0

(A) AD, BB, FG, DD (B) EA, DB, JI, EC
(C) BB, DB, IH, CE (D) CE, AE, GF, CD

23. 5 7 6 2

(A) JI, IF, IG, EE (B) FG, JF, FF, AE
(C) GH, FJ, GG, EA (D) HF, HJ, HI, BD

24. 0 7 8 0

(A) DD, GH, IH, FG (B) EC, JJ, JF, DD
(C) CD, FJ, II, CE (D) BD, GI, HG, DB

25. 1 8 4 6

(A) AC, FI, AB, IH (B) BC, GI, BE, BC
(C) EB, JF, ED, JH (D) CA, HG, CB, GI

Answers with Explanations
Exercise 1

1. (B) For B pairs are : 03, 14, 24, 31 and 40
" A " : 01, 13, 20, 32 and 43
" R " : 59, 66, 75, 88 and 97
and " E " : 04, 11, 23, 30 and 41
∴ Correct set for BARE is : 03, 20, 75, 41

2. (A) For H pairs are : 57, 69, 78, 85 and 98
" E " : 04, 11, 23, 30 and 41
" A " : 56, 68, 79, 87 and 95
and " T " : 55, 67, 76, 89 and 96
∴ Correct set for HEAT is : 78, 41, 01, 55

3. (C) For B, pairs are : 03, 14, 24, 31 and 40
" E " : 04, 11, 23, 30 and 41
" S " : 01, 13, 20, 32 and 43
and " T " : 55, 67, 76, 89 and 96
∴ Correct set for BEST is : 24, 11, 87, 67

4. (A) For M pairs are : 58, 65, 79, 89 and 98
" C " : 00, 12, 21, 30 and 42
" Q " : 55, 66, 78, 86 and 97
and " A " : 61, 14, 20, 34 and 40.
∴ Correct set for MCQA is : 65, 21, 66 and 34.

5. (B) For C pairs are : 00, 12, 21, 30 and 42
" O " : 57, 69, 77, 85 and 96
" B " : 04, 10, 22, 33 and 41
and " M " : 58, 65, 79, 89 and 98
∴ Correct set for COMB is : 42, 57, 41, 58.

6. (D) For E, pairs are : 02, 13, 23, 32 and 44
" O " : 57, 69, 77, 85 and 96
" D " : 03, 11, 24, 31 and 43
" A " : 01, 14, 20, 34 and 40.
∴ Correct set for EODA is : 44, 57, 11, 34.

7. (A) For P pairs are : 56, 67, 75, 88 and 99
" O " : 57, 69, 77, 85 and 96
" D " : 03, 11, 24, 31 and 43
" A " : 01, 14, 20, 34 and 40
∴ Correct set for PODA is : 88, 96, 24, 40.

8. (B) For P pairs are : 56, 67, 75, 85 and 99
" O " : 57, 69, 77, 85 and 96
" C " : 00, 12, 21, 30 and 42
" A " : 01, 14, 20, 34 and 40
∴ Correct set for POCA is : 99, 85, 30, 14.

9. (D) For A pairs are : 00, 12, 24, 31 and 43
" N " : 58, 65, 77, 89 and 96
" D " : 03, 10, 22, 34 and 41
∴ Correct set for AND is 31, 65, 03.

10. (C) For T pairs are : 55, 67, 79, 86 and 98
" O " " : 56, 68, 75, 87 and 99
" N " " : 58, 65, 77, 89 and 96
" E " " : 02, 14, 21, 33 and 40
∴ Correct set for TONE is 55, 56, 58, 21.

11. (B) For N, pairs are : 58, 65, 77, 89 and 96
" E " " : 02, 14, 21, 33 and 40
" P " " : 57, 69, 76, 88 and 95
" A " " : 00, 12, 24, 31 and 43
∴ Correct set for NEPA is : 58, 02, 57, 31

12. (A) For K, pairs are : 04, 11, 23, 30 and 42
" A " " : 00, 12, 24, 31 and 43
" N " " : 58, 65, 77, 89 and 96
∴ Correct set for KAN is : 04, 31, 96

13. (D) For P, pairs are : 57, 69, 76, 88 and 95
" O " " : 56, 68, 75, 87 and 99
" E " " : 02, 14, 21, 33 and 40
" T " " : 55, 67, 79, 86 and 98
∴ Correct set for POET is : 95, 56, 02, 55

14. (B) For C pairs are : 01, 13, 20, 32 and 44
" E " " : 02, 14, 21, 33 and 40
" L " " : 59, 66, 78, 85 and 97
" O " " : 56, 68, 75, 87 and 99
∴ Correct set for CELO is : 20, 02, 85, 99.

15. (D) For N, pairs are : 58, 65, 77, 89 and 96
" A " " : 00, 12, 24, 31 and 43
" T " " : 55, 67, 79, 86 and 98
" E " " : 02, 14, 21, 33 and 40
∴ Correct set for NATE is : 58, 00, 55, 33.

16. (C) For P, pairs are : 57, 69, 76, 88 and 95
" O " " : 56, 68, 75, 87 and 99
" N " " : 58, 65, 77, 89 and 96
" D " " : 03, 10, 22, 34 and 41
∴ Correct set for POND is : 57, 56, 96, 41.

17. (A) For D pairs are : 03, 10, 22, 34 and 41
" O " " : 56, 68, 75, 87 and 99
" T " " : 55, 67, 79, 86 and 98
∴ Correct set for DOTT is : 03, 56, 86, 98.

18. (B) For C, pairs are : 01, 13, 20, 32 and 44
" A " " : 00, 12, 24, 31 and 43
" P " " : 57, 69, 76, 88 and 95
" E " " : 02, 14, 21, 33 and 40
∴ Correct set for CAPE is 20, 00, 95, 02.

19. (D) For W, pairs are : 55, 69, 78, 87 and 96
" A " " : 03, 12, 21, 30 and 44
" R " " : 57, 66, 75, 89 and 98
" D " " : 00, 14, 23, 32 and 41
∴ Correct set for WARD is 78, 12, 89, 14.

20. (C) For N, pairs are : 56, 65, 79, 88 and 97
" A " " : 03, 12, 21, 30 and 44
" B " " : 02, 11, 20, 34 and 43
" D " " : 00, 14, 23, 32 and 41
∴ Correct set for NABD is : 79, 21, 11, 41

21. (D) For B, pairs are : 02, 11, 20, 34 and 43
" L " " : 59, 68, 77, 86 and 95
" A " " : 03, 12, 21, 30 and 44
" M " " : 58, 67, 76, 85 and 99
∴ Correct set for BLAM is : 20, 95, 30, 99.

22. (A) For W, pairs are : 55, 69, 78, 87 and 96
" O " " : 01, 10, 24, 33 and 42
" L " " : 59, 68, 77, 86 and 95
" B " " : 02, 11, 20, 34 and 43
∴ Correct set for WOLB is 69, 42, 68, 11.

23. (D) For D, pairs are : 00, 14, 23, 32 and 41
" A " " : 03, 12, 21, 30 and 44
" W " " : 55, 69, 78, 87 and 96
" N " " : 56, 65, 79, 88 and 97
∴ Correct set for DAWN is : 14, 12, 78, 97.

24. (A) For D, pairs are : 58, 68, 77, 86 and 99
" U " " : 03, 14, 22, 31 and 40
" V " " : 04, 10, 21, 32 and 43
" E " " : 59, 65, 79, 89 and 95
∴ Correct set for DUVE is 58, 14, 21, 59.

25. (C) For S, pairs are : 01, 12, 24, 30 and 44
" A " " : 55, 69, 78, 87 and 98
" T " " : 02, 13, 20, 33 and 41
∴ Correct set for SAT is : 12, 98, 33.

26. (A) For S, pairs are : 01, 12, 24, 30 and 44
" T " " : 02, 13, 20, 33 and 41
" U " " : 03, 14, 22, 31 and 40
" B " " : 56, 66, 75, 88 and 97
∴ Correct set for STUB is : 44, 02, 03, 66.

27. (B) For B, pairs are : 56, 66, 75, 88 and 97
" E " " : 59, 65, 79, 89 and 95
" S " " : 01, 12, 24, 30 and 44
" T " " : 02, 13, 20, 33 and 41
∴ Correct set for BEST is : 66, 59, 30, 41.

28. (A) For C pairs are : 57, 67, 76, 85 and 96
" A " " : 55, 69, 78, 87 and 98
" S " " : 01, 12, 24, 30 and 44
" T " " : 02, 13, 20, 33 and 41
∴ Correct set for CAST is : 85, 55, 01, 13.

29. (C) For A pairs are : 55, 69, 78, 87 and 98
" C " " : 57, 67, 76, 85 and 96
" T " " : 02, 13, 20, 33 and 41
∴ Correct set for ACT is : 55, 76, 20.

30. (D) For R pairs are : 00, 11, 23, 34 and 42
" A " " : 55, 69, 78, 87 and 98
" T " " : 02, 13, 20, 33 and 41
∴ Correct set for RAT is 11, 87, 20.

Exercise 2

1. (D) For '0' pairs are : LL, MN, NP, OO, PM
" '7' " " : AA, BC, CD, DE, EA
" '8' " " : AD, BB, CE, DC, ED
" '6' " " : AE, BA, CB, DA, EE.
∴ Correct set for 0786 is : OD, CD, DC, EE.
2. (B) For '2' pairs are : LN, ML, NN, OP, PL
" '8' " " : AD, BB, CE, DC, ED
" '5' " " : AB, BD, CA, DD, EC
" '9' " " : AC, BE, CC, DB, EB
∴ Correct set for 2859 is OP, AD, DD, DB.
3. (A) For '0' pairs are : LL, MN, NP, OO, PM
" '1' " " : LM, MO, NL, ON, PP
" '4' " " : LP, MM, NO, OM, PN
" '3' " " : LO, MP, NM, OL, PO
∴ Correct set for 0143 is : NP, MO, PN, OL.
4. (C) For '0' pairs are : LL, MN, NP, OO, PM
" '8' " " : AD, BB, CE, DC, ED
" '4' " " : LP, MM, NO, OM, PN
" '6' " " : AE, BA, CB, DA, EE
∴ Correct set for 0846 is : OO, AD, PN, EE.
5. (B) For '9' pairs are : AC, BE, CC, DB, EB
" '7' " " : AA, BC, CD, DE, EA
" '5' " " : AB, BD, CA, DD, EC
" '3' " " : LO, MP, NM, OL, PO
∴ Correct set for 9753 is : BE, EA, CA, NM.
6. (A) For '4' pairs are : EE, FF, GG, HF, IH
" '9' " " : JK, KK, LM, MM, NJ
" '8' " " : JM, LK, MJ, NM
" '3' " " : EH, FI, HE, IF
So the correct set for 4983 is : EE, JK, JH, EH.
7. (D) For '0' pairs are : EF, FG, GF, GI, HH, IE
" '5' " " : JL, KN, LJ, MK, MN, NK
" '2' " " : EI, FE, FH, GH, HG, IG
" '4' " " : EE, FF, GG, HF, IH
So the correct set for 0524 is EF, JL, EI, IH.
8. (B) For '9' pairs are : JK, KK, LM, MM, NJ
" '7' " " : JJ, KL, LN, ML, NN
" '3' " " : EH, FI, HE, IF
" '6' " " : JN, KJ, LL, NL
So the correct set for 9736 is NJ, ML, IF, LL
9. (C) For '4' pairs are : EE, FF, GG, HF, IH
" '5' " " : JL, KN, LJ, MK, MN, NK
" '3' " " : EH, FI, HE, IF
So the correct set for 4553 is : HF, MK, KN, HE
10. (C) For '8' pairs are : JM, LK, MJ, NM
" '9' " " : JK, KK, LM, MM, NJ
" '4' " " : EE, FF, GG, HF, IH
" '3' " " : EH, FI, HE, IF
So the correct set for 8943 is : JM, KK, EE HE.
11. (D) For '2' pairs are : VW, WX, XY, YZ, ZY
" '0' " " : VV, WW, XX, YY, ZZ
" '6' " " : PT, QQ, RS, ST, TP
∴ Correct set for 2006 is : WX, YY, WW, ST.
12. (A) For '8' pairs are : PS, QT, RR, SP, TR
" '9' " " : PR, QP, RT, SS, TQ
" '4' " " : UX, WV, XV, YW, ZV
" '6' " " : PT, QQ, RS, ST, TP
∴ Correct set for 8946 is TR, SS, XV, ST.
13. (A) For '1' pairs are : VZ, WY, XW, YV, ZX
" '9' " " : PR, QP, RT, SS, TQ
" '8' " " : PS, QT, RR, SP, TR
∴ The Correct set for 1989 is : YV, SS, PS, QP.
14. (B) For '2' pairs are : VW, WX, XY, YZ, ZY
" '3' " " : VY, WZ, XZ, YX, ZW
" '0' " " : VV, WW, XX, YY, ZZ
∴ Correct set for 2303 is : WX, VY, WW, YX.
15. (C) For '1' pairs are : VZ, WY, XW, YV, ZX
" '9' " " : PR, QP, RT, SS, TQ
" '0' " " : VV, WW, XX, YY, ZZ
" '6' " " : PT, QQ, RS, ST, TP
∴ Correct set for 1906 is : ZX, SS, YY, PT.
16. (B) For '1' pairs are : TT, UX, VV, WU, XW
" '4' " " : TX, UU, VT, WW, XU
" '8' " " : OQ, PR, QS, RQ, SO
" '0' " " : TV, UT, VW, WX, XV
∴ The correct set for 1480 is : TT, TX, OQ, TV.
17. (C) For '5' pairs are : OS, PQ, QP, RO, SQ
" '3' " " : TU, UW, VU, WV, XT
" '9' " " : OO, PS, QR, RP, SR
" '2' " " : TW, UV, VX, WT, XX
∴ The correct set for 5392 is : OS, TU, OO, TW.
18. (A) For '9' pairs are : OO, PS, QR, RP, SR
" '8' " " : OQ, PR, QS, RQ, SO
" '0' " " : TV, UT, VW, WX, XV
∴ The correct set for 9800 is OO, OQ, TV, UT.
19. (D) For '1' pairs are : TT, UX, VV, WV, XW
" '9' " " : OO, PS, QR, RP, SR
" '8' " " : OQ, PR, QS, RQ, SO
∴ The correct set for 1989 is : XW, SR, RQ, QR.
20. (B) For '2' pairs are : TW, UV, VX, WT, XX
" '1' " " : TT, UX, VV, WV, XW
" '9' " " : OO, PS, QR, RP, SR
" '0' " " : TV, UT, VW, WX, XV
∴ The correct set for 2190 is XX, XW, QR, VW.

Continued on Page 210

Figure Matrix

There are rows and columns in the matrix. Horizontal line is called **row** while the vertical line is called **column**. There is a certain relation between the elements of rows and coloumns. In this type of questions a matrix is given in which one space is left blank or denoted by a question mark. Four answer figures are followed by the matrix. The candidate has to find out which answer figure will be replaced by the question mark.

Example 1.

I.	2	4	6
II.	3	6	9
III.	4	8	12

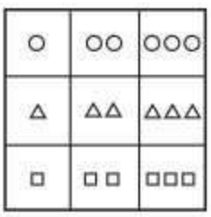
In this the relation between the numbers of rows is shown below :

I. $2, 2 \times 2 = 4, 2 \times 3 = 6$

II. $3, 3 \times 2 = 6, 3 \times 3 = 9$

III. $4, 4 \times 2 = 8, 4 \times 3 = 12$

Similarly



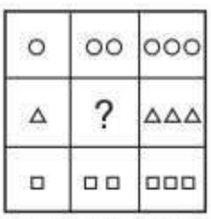
In this the relation between the figures of rows is shown below :

I. One circle, two circles, three circles

II. One triangle, two triangles, three triangles

III. One square, two squares, three squares

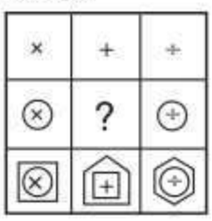
Note : In the following matrix, we can find the design in place of question mark by the relation given above.

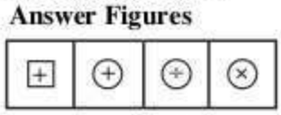


From the relation given above we see that there will be two triangles (ΔΔ) in place of question mark.

Example 2. In the following matrix, which of the answer figures will replace the question mark ?

Matrix **Answer Figures**



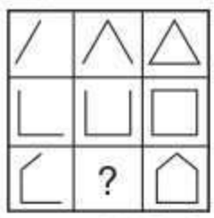


(A) (B) (C) (D)

Answer with Explanation : (B) Here the relation is in the columns. In the first column, in the I row is x, in the II row the design of I is enclosed by a circle while in III row the design of II is enclosed by a square. By the same relation in Second column in place of ? The design '+' will be enclosed by a circle. Hence the answer is (B).

Example 3. In the following matrix which of the answer figures will replace the question mark ?

Matrix **Answer Figures**



(A) (B) (C) (D)

Answer with Explanation : (C) Here the relation is in rows.

In I row → the designs are of one line, two lines, and three lines.

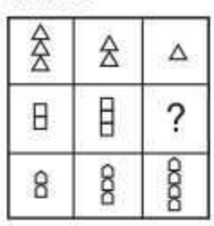
In II row → the designs of two lines, three lines and four lines.

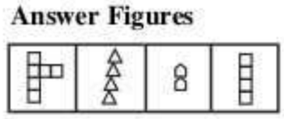
In III row → the design of three lines, four lines and five lines.

Hence the answer figure (C) will replace the question mark.

Example 4. In the following matrix, which of the answer figures will replace the question mark ?

Matrix **Answer Figures**





(A) (B) (C) (D)

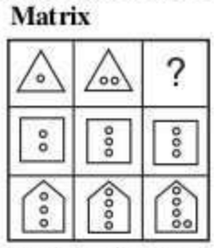
Answer with Explanation : (D) In I row the designs are decreasing by one—3, 2, 1.

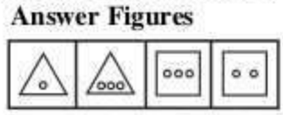
In II row the designs are increasing by one 2, 3 4.

Hence answer figure (D) will replace the question mark.

Example 5. In the following matrix, which one of the answer figures will replace the question mark ?

Matrix **Answer Figures**





(A) (B) (C) (D)

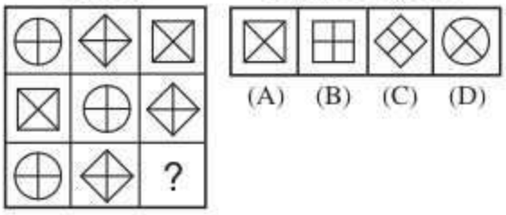
Answer with Explanation : (B) In first row the number of small circles is increasing by one in the

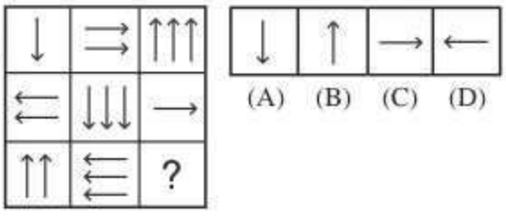
triangle. Hence the answer figure (B) will replace the question mark.

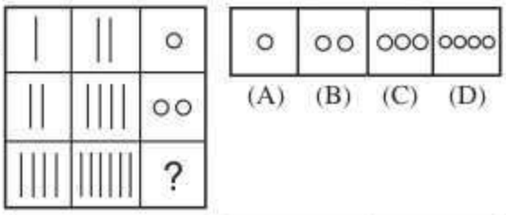
Exercise

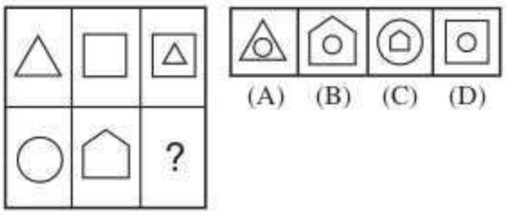
Directions—(Q. 1–35) In each of the following questions there is one matrix followed by four answer figures. In the matrix there are eight designs and one space left black shown by question mark. Find which of the answer figure will replace the question mark.

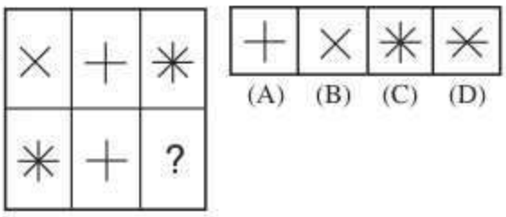
Matrix **Answer Figures**

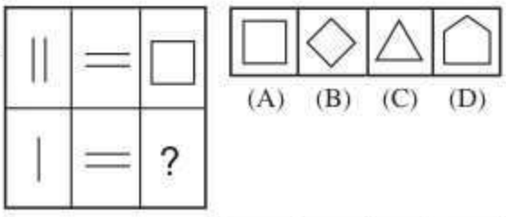
1. 

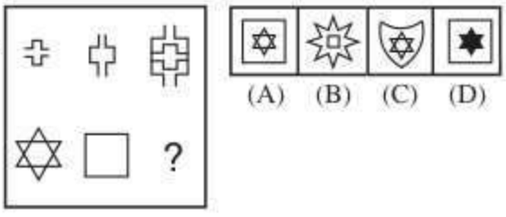
2. 

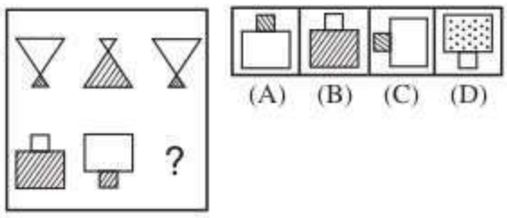
3. 

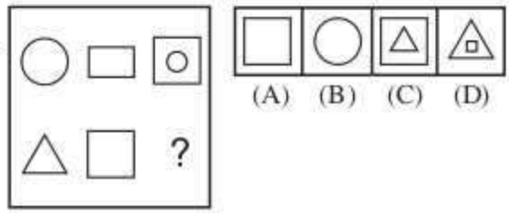
4. 

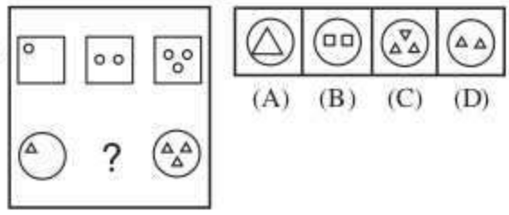
5. 

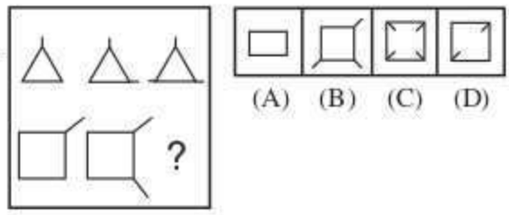
6. 

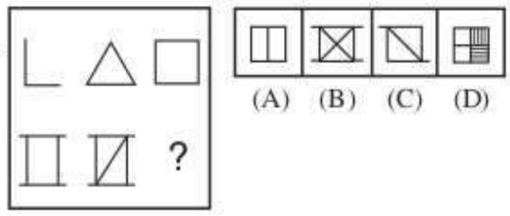
7. 

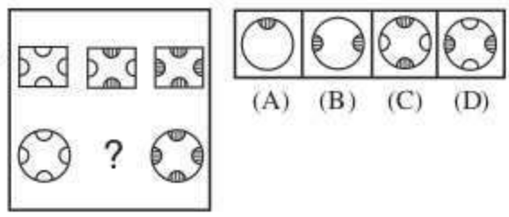
8. 

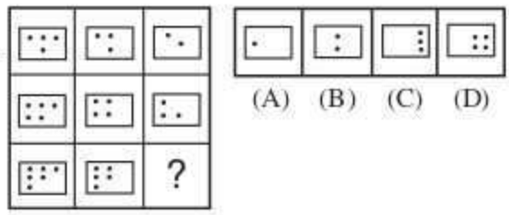
9. 

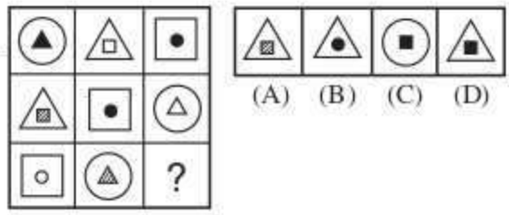
10. 

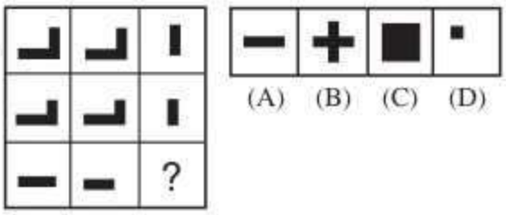
11. 

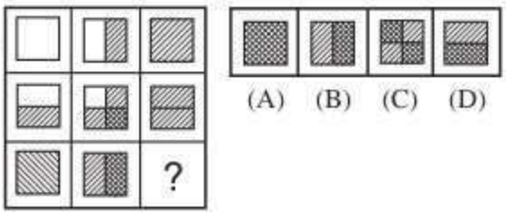
12. 

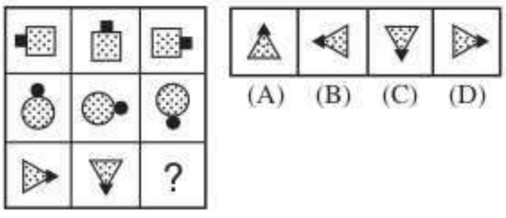
13. 

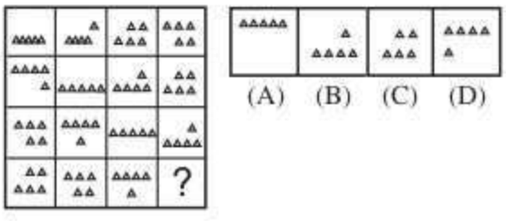
14. 

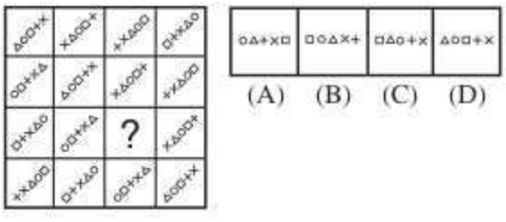
15. 

16. 
(A) (B) (C) (D)

17. 
(A) (B) (C) (D)

18. 
(A) (B) (C) (D)

19. 
(A) (B) (C) (D)

20. 
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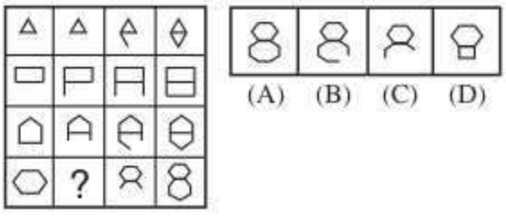
21. 
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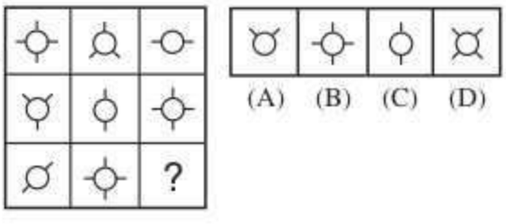
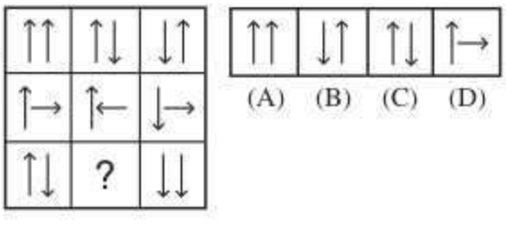
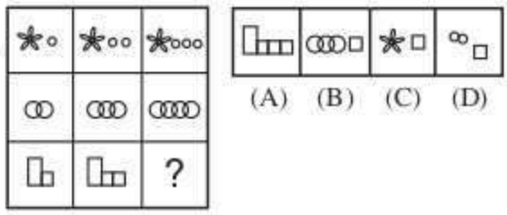
22. 
(A) (B) (C) (D)

23. 
(A) (B) (C) (D)

24. 
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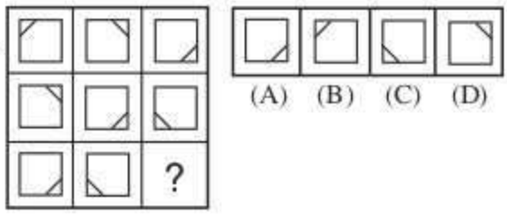
25. 
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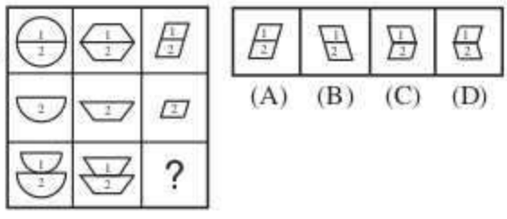
26. 
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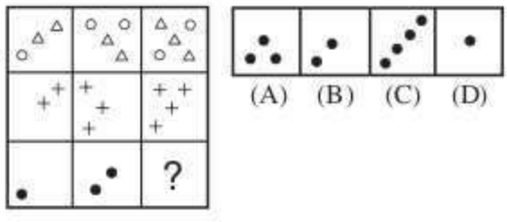
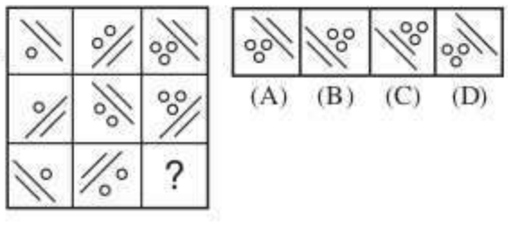
27. 
(A) (B) (C) (D)

28. 
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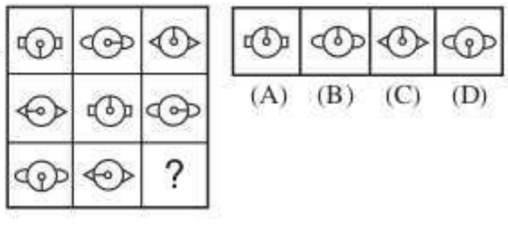
29. 
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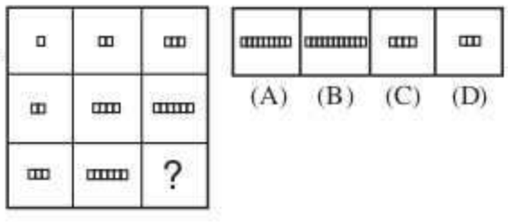
30. 
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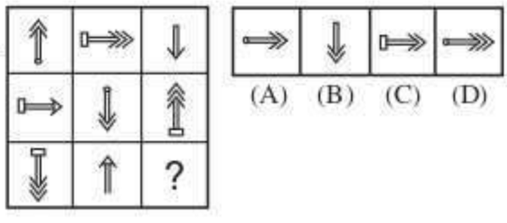
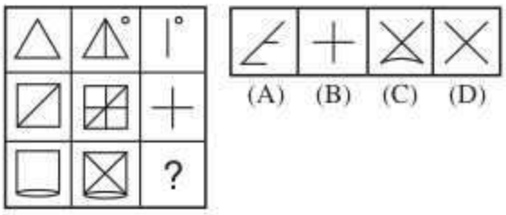
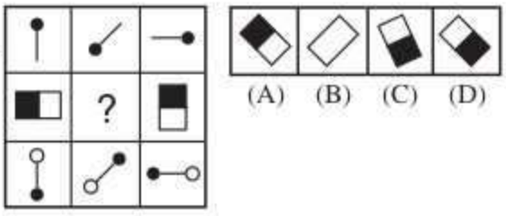
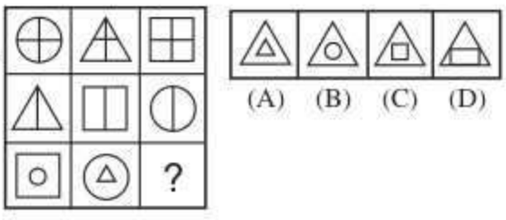
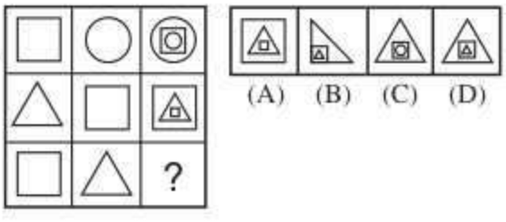
31. 
(A) (B) (C) (D)

32. 

33. 

34. 

35. 

Answers

1. (A)	2. (A)	3. (C)	4. (B)	5. (B)
6. (C)	7. (A)	8. (B)	9. (C)	10. (D)
11. (B)	12. (B)	13. (C)	14. (D)	15. (D)
16. (D)	17. (A)	18. (B)	19. (A)	20. (D)
21. (C)	22. (B)	23. (A)	24. (A)	25. (B)
26. (C)	27. (A)	28. (B)	29. (A)	30. (A)
31. (A)	32. (D)	33. (D)	34. (C)	35. (D)

●●●

Continued from Page 186

17. (C) Given Set :

$8 \sim 9$ = Odd Number

$9 \sim 10$ = Odd Number

Set (C) : 7, 10, 13

$7 \sim 10$ = Odd Number

$10 \sim 13$ = Odd Number

18. (A) Given Set : $14, \underset{+9}{\underline{\quad}} 23, \underset{+9}{\underline{\quad}} 32$

Set (A) : $12 \underset{+9}{\underline{\quad}} 21 \underset{+9}{\underline{\quad}} 30$

19. (D) Given Set : $48 \underset{\times\frac{1}{2}}{\underline{\quad}} 24 \underset{\times\frac{1}{2}}{\underline{\quad}} 12$

Set (D) : $40 \underset{\times\frac{1}{2}}{\underline{\quad}} 20 \underset{\times\frac{1}{2}}{\underline{\quad}} 10$

20. (A) The difference of any two numbers is divisible by 11.
i.e. in these set

$813 \sim 538 = 275$ divisible by 11
$538 \sim 725 = 187$ " " 11
From (A) $813 \sim 219 = 594$ " " 11

21. (B) The difference of any two numbers is divisible by 111.

22. (B) The difference any two numbers is divisible by 112.

23. The unit digits of all the numbers are even numbers.

24. (C) In $363 \rightarrow 3+6+3 = 12 \rightarrow 1+2=3$
In $489 \rightarrow 4+8+9 = 21 \rightarrow 2+1=3$
In $579 \rightarrow 5+7+9 = 21 \rightarrow 2+1=3$
Similarly in
$471 \rightarrow 4+7+1 = 12 \rightarrow 1+2=3$

25. In $957 \rightarrow 9+5+7=21$
In $777 \rightarrow 7+7+7=21$
In $876 \rightarrow 8+7+6=21$
Similarly in $894 \rightarrow 8+9+4=21$.

Mirror and Water Image

We can see the image of any object, number or alphabet in two ways—

(1) By mirror,

(2) By water through the light.

(1) **Mirror Image**—The image of any object, number and letter is formed through the mirror, is called mirror image. According to this principle, the size of the image is equal to the size of the object but the sides change *i.e.*, left to right and right to left.

As—

(1) SIMULATOR → ЯOTAꓶUMIS

(2) D6Z7F4 → ⅁ƎZ⅂Ꮾ

(3) SNACK → ꓘƆAИS

(4) T3P2Y5 → ƧYƧƐT

(5) →

(2) **Water Image**—The reflection of any object, number and letter seen through the water is called water image.

As—

(1) SIMULATOR → ꓢIWUꓶ∀TOꓤ

(2) D6Z7F4 → D9ZꓶƐ⅁

(3) SNACK → ꓢИ∀ꓒK

(4) →

S. No.	Capital Letters of English Alphabet	The Position of Image	
		In Mirror	In Water
1.	A	A	∀
2.	B	ᗺ	B
3.	C	Ↄ	C
4.	D	ᗡ	D
5.	E	Ǝ	E
6.	F	Ⅎ	Ꮈ
7.	G	⅁	⅁
8.	H	H	H
9.	I	I	I
10.	J	Ⴑ	ꓶ
11.	K	ꓘ	K
12.	L	⅃	Γ
13.	M	M	ꟽ
14.	N	И	И
15.	O	O	O
16.	P	ᑫ	Ь
17.	Q	Ọ	Ꭾ
18.	R	Я	Ꮅ
19.	S	Ƨ	Ƨ
20.	T	T	⊥
21.	U	U	∩
22.	V	V	Λ
23.	W	W	ʍ
24.	X	X	X
25.	Y	Y	⅄
26.	Z	Ƹ	Ƹ

S. No.	Small Letters of English Alphabet	The Position of Image	
		In Mirror	In Water
1.	a, a	ɐ, a	ɐ, a
2.	b, b	d, d	q, p
3.	c	c	c
4.	d	b	q
5.	e	ɔ	ɔ
6.	f, f	ɟ, ꟻ	ɟ, f
7.	g	ᵷ	ᵷ
8.	h	ɥ	ᑲ
9.	i	i	ᑊ
10.	j	ᒧ	ᒡ
11.	k	ʞ	k
12.	l	l	ɾ
13.	m	ɯ	ɯ
14.	n	u	u
15.	o	o	o
16.	p	q	b
17.	q	p	d
18.	r	ɹ	ɹ
19.	s	s	s
20.	t	ʇ	ɾ
21.	u	u	n
22.	v	ʌ	ʌ
23.	w	ʍ	ʍ
24.	x	x	x
25.	y	ʏ	ʎ
26.	z	z	z

Number	Mirror Image	Water Image
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Exercise

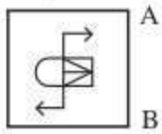
Directions—(Q. 1–5) These questions are based upon image. For answering the questions, select the proper alternative from the following alternatives which are given below—

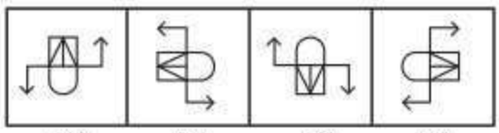
A person is lying on the bed. He sees his image through a large mirror which is in front of him. His right hand is towards the West in the mirror and his both the hands are in a straight line.

1. The direction of that man's head is originally—
   (A) North (B) South
   (C) East (D) West
   (E) North–West
2. The direction of his left hand is originally—
   (A) North (B) South
   (C) East (D) South-East
   (E) West
3. The direction of the feet of shaded person (in the mirror)—
   (A) East (B) West
   (C) North (D) South
   (E) North–East
4. If the person turns over while resting towards the right, what will be position of his back (in the mirror) ?
   (A) North (B) West
   (C) South-East (D) West
   (E) North–West
5. The direction of the dressing table to the legs of the bed—
   (A) East (B) West
   (C) North (D) South
   (E) North–West

Directions—(Q. 6–10) Answer the questions based upon water image. These question are related to number/alphabet and their water images. Select the proper alternative from the given alternatives.

6. B K 5 O R P 6 2
   (A) B K 5 O R P 6 2 (B) B K 5 O R P 6 2
   (C) B K 5 O R P 6 2 (D) B K 5 O R P 6 2
   (E) None of these
7. 5 D O B 6 V 2
   (A) 5 D O B 6 V 2 (B) 5 D O B 6 V 2
   (C) 5 D O B 6 V 2 (D) 5 D O B 6 V 2
   (E) None of these
8. 9 6 F S H 5 2
   (A) 9 6 F S H 5 2 (B) 9 6 F S H 5 2
   (C) 9 6 F S H 5 2 (D) 9 6 F S H 5 2
   (E) None of these
9. 5 0 J A 3 2 D E O 6
   (A) 5 0 J A 3 2 D E O 6 (B) 5 0 J A 3 2 D E O 6
   (C) 5 0 J A 3 2 D E O 6 (D) 5 0 J A 3 2 D E O 6
   (E) None of these
10. R A J 5 8 9 D 8
    (A) R A J 5 8 9 D 8 (B) R A J 5 8 9 D 8
    (C) R A J 5 8 9 D 8 (D) R A J 5 8 9 D 8
    (E) None of these
11. In a mirror, a watch shows the time quarter past three. What is the correct time by the watch ?
    (A) 3·15 (B) 8·45
    (C) 9·15 (D) 9·45
12. When a mirror is kept on A B. Which will be the image of the figure ?

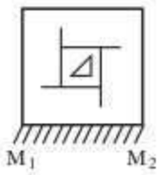


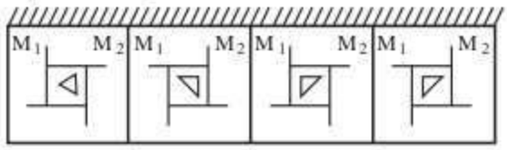


(A) (B) (C) (D)

Directions—Find out the proper image of given figure from the answer alternatives for question No. 13 and 14.

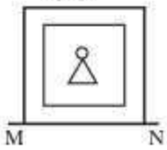
13.

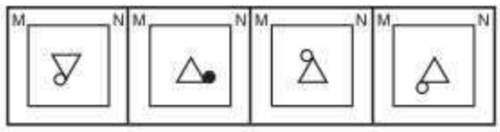




(A) (B) (C) (D)

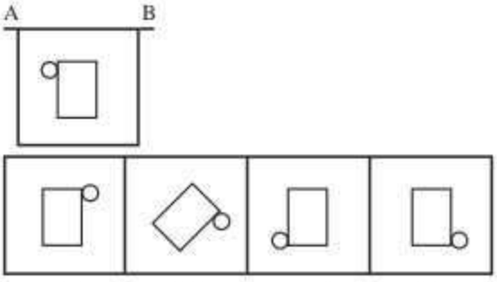
14.





(A) (B) (C) (D)

15. If a mirror is placed on A B, which of the following figures will be the image of the figure ?



(A) (B) (C) (D)

16. In a mirror a word is shown as 'ƎNIRAM'. What is the correct form of the word ?
(A) ENIRAM (B) MAREIN
(C) ENIMAR (D) MARINE
(E) None of these

17. In a mirror, A figure is shown as . What is correct form of the figure ?

(A) (B)

(C) (D)

(E) None of these

18. In a mirror, a word is shown as 'ИOSAEЯ'. What is the correct form of the word ?
(A) SONREA (B) NOSAER
(C) REASON (D) REANOS
(E) None of these

19. In the water, a word is shown as 'ЬЯVAKVSH'. What is the correct form of the word ?
(A) PRASHAK (B) PRAKASH
(C) PRSKHAP (D) KRASHAP
(E) None of these

20. In the water, a figure is shown as . What is the correct form of the figure ?

(A) (B)

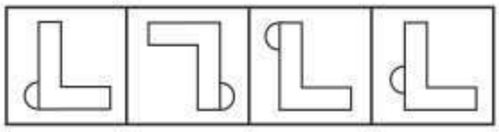
(C) (D)

(E) None of these

21. From the following figures, which figure displays the exact image in the mirror while the position of the mirror at MX ?

Question Figure

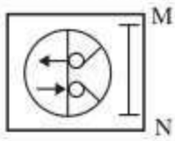
Answer Figures



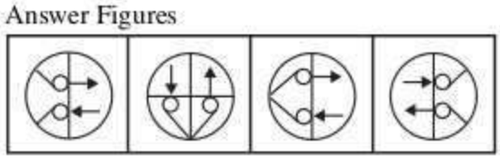
(A) (B) (C) (D)

22. From the answer figures, which figure will be the exact mirror copy while the mirror position is at MN ?

Question Figure



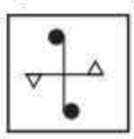
Answer Figures



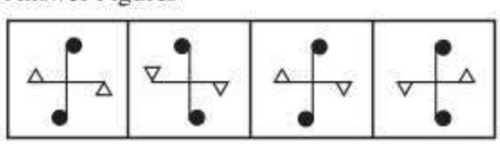
(A) (B) (C) (D)

23. Find out the correct water image from the following alternatives.

Question Figure



Answer Figures

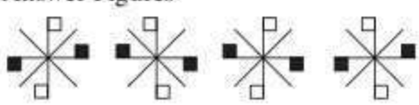


(A) (B) (C) (D)

24. Find the correct water image from the following alternatives.

Question Figure

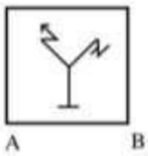
Answer Figures



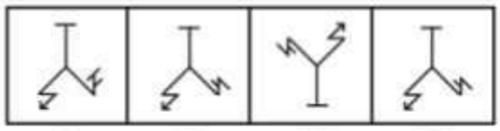
(A) (B) (C) (D)

Directions—(Q. 25–30) From the given four following answer figures for each question, which figure is the correct image of the given figure ?

25. Question Figure

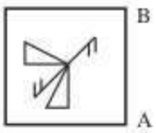


Answer Figures

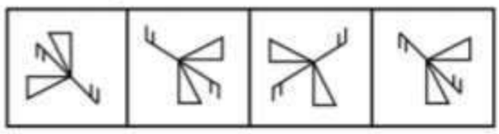


(A) (B) (C) (D)

26. Question Figure

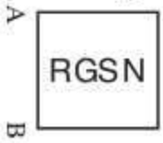


Answer Figures



(A) (B) (C) (D)

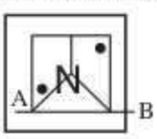
27. Question Figure



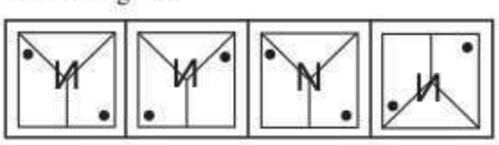
Answer Figures

(A) (B) (C) (D)

28. Question Figure

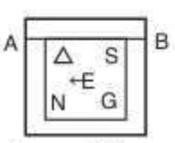


Answer Figures

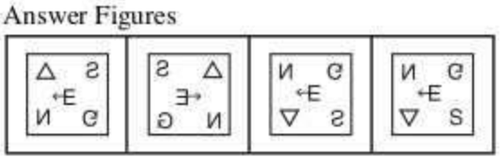


(A) (B) (C) (D)

29. Question Figure

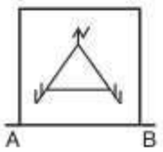


Answer Figures

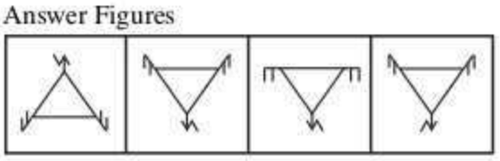


(A) (B) (C) (D)

30. Question Figure



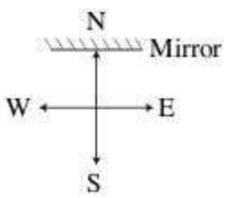
Answer Figures



(A) (B) (C) (D)

Answers

For Question No. 1 to 5.



1. (B)	2. (E)	3. (D)	4. (D)	5. (C)
6. (B)	7. (D)	8. (C)	9. (E)	10. (A)
11. (B)	12. (B)	13. (B)	14. (A)	15. (C)
16. (D)	17. (E)	18. (C)	19. (B)	20. (D)
21. (C)	22. (A)	23. (C)	24. (B)	25. (B)
26. (D)	27. (A)	28. (A)	29. (C)	30. (B)

Continued from Page 202

21. (C) For '9' pairs are : FH, GF, HH, IJ, JG
" '4' " " : AB, BE, CB, DA, ED
" '6' " " : FF, GG, HI, IG, JH
" '1' " " : AC, BC, CA, DE, EB
∴ The correct set for 9461 is : JG, ED, JH, EB.

22. (B) For '3' pairs are : AD, BB, CE, DC, EA
" '2' " " : AE, BA, CC, DB, EE
" '5' " " : FG, GH, HF, IH, JI
" '0' " " : AA, BD, CD, DD, EC
∴ The correct set for 3250 is : EA, EE, JI, EC.

23. (A) For '5' pairs are : FG, GH, HF, IH, JI
" '7' " " : FJ, GI, HJ, IF, JJ
" '6' " " : FF, GG, HI, IG, JH
" '2' " " : AE, BA, CC, DB, EE
∴ The correct set for 5762 is : JI, IF, IG, EE.

24. (B) For '0' pairs are : AA, BD, CD, DD, EC
" '7' " " : FJ, GI, HJ, IF, JJ
" '8' " " : FI, GH, HG, II, JF
∴ The correct set for '0780' is : EC, JJ, JF, DD.

25. (C) For '1' pairs are : AC, BC, CA, DE, EB
" '8' " " : FI, GJ, HG, II, JF
" '4' " " : AB, BE, CB, DA, ED
" '6' " " : FF, GG, HI, IG, JH
∴ The correct set for 1846 is : EB, JF, ED, JH. ●●

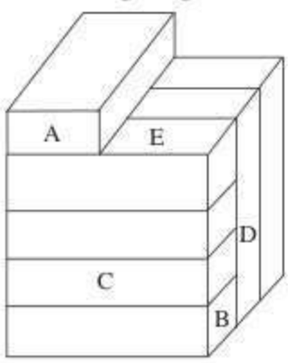
Brick Test

Under this type of questions diagrams are given in which bricks are arranged in a certain manner. The question is asked, how a certain brick is touching other bricks. In this chapter ten bricks are arranged and 10 questions are asked and only five minutes are given to solve the question. The students are advised to make a practice by which touch work becomes easy and more marks are obtained in order to success in the railway board examination.

For practice some examples are given below—

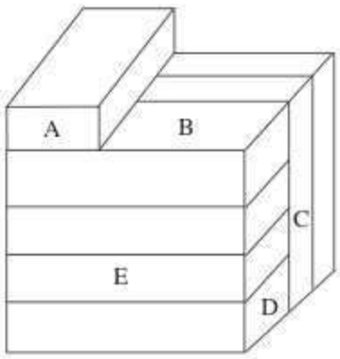
Exercise

Directions—(Q. 1–5) Answer the following questions on the basis of the diagram given below :



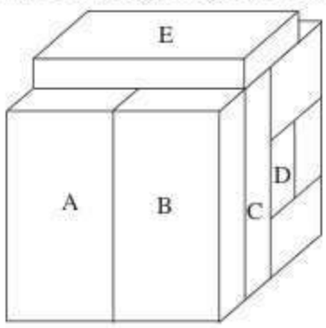
1. How many bricks are touched by the brick **A** ?
   (A) 3 (B) 2 (C) 4 (D) 5
2. Brick **B** touches how many bricks ?
   (A) 2 (B) 3 (C) 4 (D) 6
3. Brick **C** touches how many bricks ?
   (A) 2 (B) 5 (C) 3 (D) 6
4. Brick **D** touches how many bricks ?
   (A) 2 (B) 4 (C) 5 (D) 6
5. Brick **E** touches how many bricks ?
   (A) 4 (B) 3 (C) 2 (D) 1

Directions—(Q. 6–10) Answer the following questions on the basis of the diagram given below :



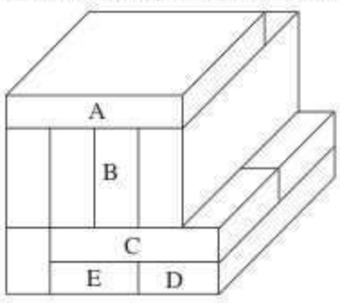
6. Brick **A** touches how many bricks ?
   (A) 3 (B) 6 (C) 5 (D) 4
7. Brick **B** touches how many bricks ?
   (A) 3 (B) 4 (C) 6 (D) 5
8. Brick **C** touches how many bricks ?
   (A) 2 (B) 3 (C) 4 (D) 6
9. Brick **D** touches how many bricks ?
   (A) 6 (B) 2 (C) 5 (D) 4
10. Brick **E** touches how many bricks ?
    (A) 3 (B) 6 (C) 7 (D) 5

Directions—(Q. 11–15) Answer the following questions on the basis of the diagram given below :



11. Brick **A** touches how many bricks ?
    (A) 3 (B) 2 (C) 6 (D) 5
12. Brick **B** touches how many bricks ?
    (A) 3 (B) 2 (C) 4 (D) 6
13. Brick **C** touches how many bricks ?
    (A) 2 (B) 4 (C) 3 (D) 6
14. Brick **D** touches how many bricks ?
    (A) 4 (B) 5 (C) 6 (D) 2
15. Brick **E** touches how many bricks ?
    (A) 2 (B) 4 (C) 6 (D) 5

Directions—(Q. 16–20) Answer the following questions on the basis of the diagram given below :



16. Brick **A** touches how many bricks ?
    (A) 2 (B) 6 (C) 5 (D) 4

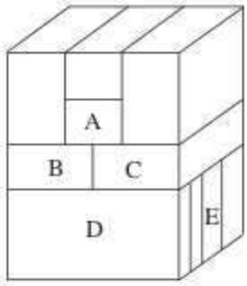
17. Brick **B** touches how many bricks ?
(A) 2 (B) 4 (C) 5 (D) 6

18. Brick **C** touches how many bricks ?
(A) 2 (B) 6 (C) 7 (D) 3

19. Brick **D** touches how many bricks ?
(A) 3 (B) 5 (C) 4 (D) 6

20. Brick **E** touches how many bricks ?
(A) 6 (B) 5 (C) 3 (D) 4

Directions—(Q. 21–25) Answer the following questions on the basis of the diagram given below :



21. Brick **A** touches how many bricks ?
(A) 5 (B) 2 (C) 7 (D) 6

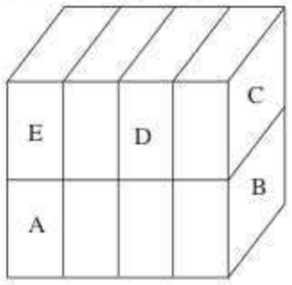
22. Brick **B** touches how many bricks ?
(A) 7 (B) 3 (C) 4 (D) 5

23. Brick **C** touches how many bricks ?
(A) 5 (B) 7 (C) 6 (D) 3

24. Brick **D** touches how many bricks ?
(A) 7 (B) 2 (C) 5 (D) 3

25. Brick **E** touches how many bricks ?
(A) 5 (B) 4 (C) 7 (D) 3

Directions—(Q. 26–30) Answer the following questions on the basis of the diagram given below :



26. Brick **A** is touching how many bricks ?
(A) 7 (B) 5 (C) 3 (D) 2

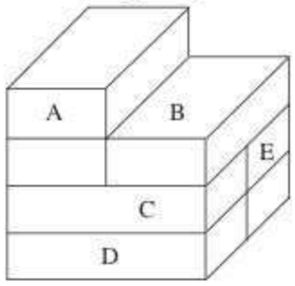
27. Brick **B** is touching how many bricks ?
(A) 2 (B) 3 (C) 4 (D) 5

28. Brick **C** touches how many bricks ?
(A) 2 (B) 1 (C) 3 (D) 5

29. Brick **D** touches how many bricks ?
(A) 1 (B) 2 (C) 3 (D) 6

30. Brick **E** touches how many bricks ?
(A) 2 (B) 7 (C) 3 (D) 5

Directions—(Q. 31–35) Answer the following questions on the basis of the diagram given below :



31. Brick **A** touches how many bricks ?
(A) 1 (B) 3 (C) 4 (D) 5

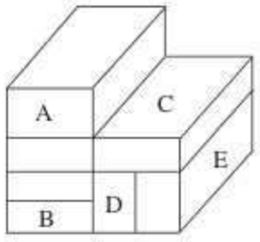
32. Brick **B** touches how many bricks ?
(A) 2 (B) 3 (C) 4 (D) 1

33. Brick **C** touches how many bricks ?
(A) 2 (B) 3 (C) 4 (D) 5

34. Brick **D** touches how many bricks ?
(A) 3 (B) 2 (C) 4 (D) 5

35. Brick **E** touches how many bricks ?
(A) 4 (B) 3 (C) 5 (D) 2

Directions—(Q. 36–40) Answer the following questions on the basis of the diagram given below :



36. Brick **A** touches how many bricks ?
(A) 1 (B) 2 (C) 3 (D) 4

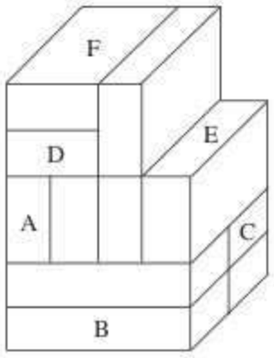
37. Brick **B** touches how many bricks ?
(A) 1 (B) 2 (C) 3 (D) 4

38. Brick **C** touches how many bricks ?
(A) 1 (B) 2 (C) 3 (D) 4

39. Brick **D** touches how many bricks ?
(A) 1 (B) 2 (C) 3 (D) 4

40. Brick **E** touches how many bricks ?
(A) 2 (B) 1 (C) 3 (D) 4

Directions—(Q. 41–46) Answer the following questions on the basis of the diagram given below :



41. Brick **A** touches how many bricks ?
(A) 4 (B) 3 (C) 2 (D) 1

42. Brick **B** touches how many bricks ?
(A) 1 (B) 2 (C) 3 (D) 4

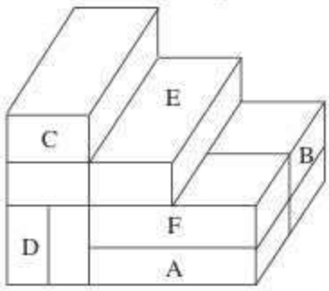
43. Brick **C** touches how many bricks ?
(A) 5 (B) 6 (C) 4 (D) 3

44. Brick **D** touches how many bricks ?
(A) 2 (B) 3 (C) 4 (D) 5

45. Brick **E** touches how many bricks ?
(A) 2 (B) 3 (C) 4 (D) 6

46. Brick **F** touches how many bricks ?
(A) 4 (B) 2 (C) 3 (D) 1

Directions—(Q. 47–52) Answer the following questions on the basis of the diagram given below :



47. Brick **A** touches how many bricks ?
(A) 3 (B) 2 (C) 4 (D) 5

48. Brick **B** touches how many bricks ?
(A) 3 (B) 4 (C) 1 (D) 2

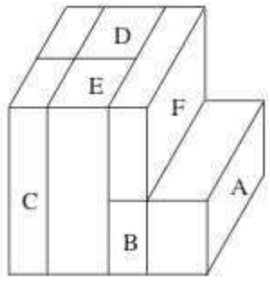
49. Brick **C** touches how many bricks ?
(A) 2 (B) 3 (C) 4 (D) 1

50. Brick **D** touches how many bricks ?
(A) 2 (B) 3 (C) 4 (D) 5

51. Brick **E** touches how many bricks ?
(A) 2 (B) 3 (C) 5 (D) 6

52. Brick **F** touches how many bricks ?
(A) 1 (B) 2 (C) 3 (D) 4

Directions—(Q. 53–58) Each of the following questions are based on the diagram given below :



53. How many bricks are touched by the brick **A** ?
(A) 1 (B) 2 (C) 3 (D) 4

54. How many bricks are touched by the brick **B** ?
(A) 2 (B) 4 (C) 3 (D) 5

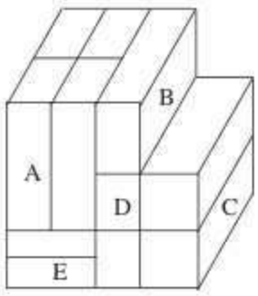
55. How many bricks are touched by the brick **C** ?
(A) 2 (B) 3 (C) 4 (D) 5

56. How many bricks are touched by the brick **D** ?
(A) 2 (B) 4 (C) 3 (D) 5

57. How many bricks are touched by the brick **E** ?
(A) 2 (B) 4 (C) 3 (D) 6

58. How many bricks are touched by the brick **F** ?
(A) 2 (B) 6 (C) 3 (D) 5

Directions—(Q. 59–63) Each of the following questions are based on the diagram given below :



59. How many bricks are touched by the brick **A** ?
(A) 3 (B) 4 (C) 5 (D) 2

60. How many bricks are touched by the brick **B** ?
(A) 5 (B) 3 (C) 2 (D) 4

61. How many bricks are touched by the brick **C** ?
(A) 1 (B) 2 (C) 3 (D) 4

62. How many bricks are touched by the brick **D** ?
(A) 2 (B) 4 (C) 5 (D) 6

63. How many bricks are touched by the brick **E** ?
(A) 1 (B) 3 (C) 2 (D) 4

Answers

1. (A)	2. (A)	3. (C)	4. (D)	5. (B)
6. (A)	7. (A)	8. (D)	9. (B)	10. (A)
11. (B)	12. (B)	13. (D)	14. (A)	15. (A)
16. (D)	17. (C)	18. (C)	19. (A)	20. (D)
21. (A)	22. (A)	23. (B)	24. (D)	25. (B)
26. (D)	27. (A)	28. (A)	29. (C)	30. (A)
31. (A)	32. (B)	33. (C)	34. (B)	35. (A)
36. (A)	37. (B)	38. (C)	39. (D)	40. (A)
41. (A)	42. (B)	43. (B)	44. (C)	45. (B)
46. (B)	47. (A)	48. (B)	49. (D)	50. (A)
51. (B)	52. (D)	53. (A)	54. (B)	55. (A)
56. (B)	57. (B)	58. (C)	59. (A)	60. (B)
61. (B)	62. (B)	63. (C)		

●●●

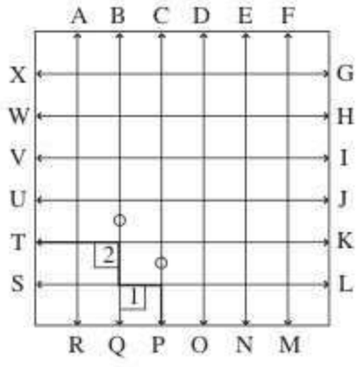
Shortest Route

Shortest route or supreme route is an important chapter on which the questions are given in SSC and Psychological Test of Railway examination. The questions based on this chapter are very simple. Since the candidates do not have the based and relevant information they commit mistake in solving the questions and they do not understand the proper way to solve them. In various competitive magazine and books the solutions are given to solve these type of questions but they are not proper and useless. We are giving some basic principles by which any can be solved easily.

Point to be remembered—(1) In each figure, the horizontal (↕) or vertical (↔) lines shows the route and sometimes these lines are barred by (—O—) signs through which nothing can be crossed over.

(2) In a figure, many small squares are drawn in it, in which a number is given in place of [*]. These small squares are fourwalled structure in which two walls are adjacent to its route.

Example—

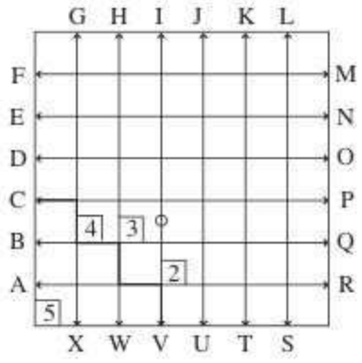


Which is the shortest-route from P to T.

While moving P to T two small squares [1] and [2] comes in between. Since two walls of the routes are in touch with number 2 and only one wall is in touch with number 1, hence clearly the 2 will be the answer. The point is to be remembered that the sign O indicates the barrier which means that route is closed. We choose only that route which touches the walls of small squares. Thus, the selected route will be your answer.

(3) Outer wall must not be touched while selecting the route. It is to be noted that the route must not touch outer wall the reason is that the outer wall is opened and one cannot find one's way due to losing the way. The given arrow → shows the opening of the route. Hence, the outer must not be touched in route.

Example—

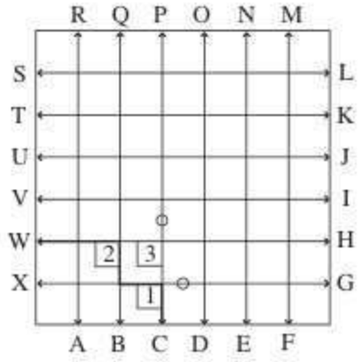


Which is the best route from V to C ?

To reach from V to C, we can select mainly two routes. In one route, box no [2], [3] and [4] are on the way in which only box no. [4] is touches the wall. Hence, box [4] will be a route. There is another route from V to C in route W, X, A and B in which box [5] is on the way. Thus the second route is [5]. But the condition is that there must not outer wall for the route. So, the box [5] is not our answer. Finally, our answer will be [4].

(4) There must be the minimum turn for selecting the route. As per rule of science that momentum = mass × velocity and we know that the mass of vehicle is always constant. Before reaching to any turn, the velocity of vehicle will reduce then its velocity will increase after crossing the turn. Hence before the turn, the momentum always reduce and after the turn, the momentum increases. Thus, to increase or decrease in momentum is not convenient for any matter or vehicle. Hence, for convenient or supreme route, it is advisable that there should be minimum turns.

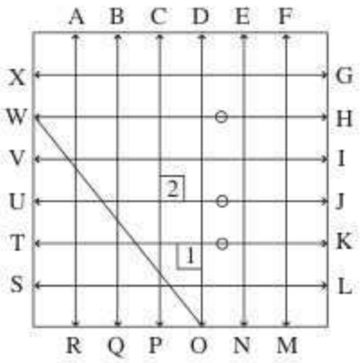
Which is the supreme route from C to W ?



In the above mentioned figure there are two routes. The first route is shown by 1 2 for C to W in which there are three turns. The second route is shown by 1, 3 for C to W and it has only one turn. According to first route, the answer is 2 but for second route, the answer is 3. Hence, the supreme route is 3 because there are minimum turns.

(5) Route should be nearest to shortest live drawn— Sometimes, we get two routes as an answer but there may be only are route which is shortest and convenient. For this reason, we draw a line from starting to end point and then we see which route is nearest, that will be convenient and the best.

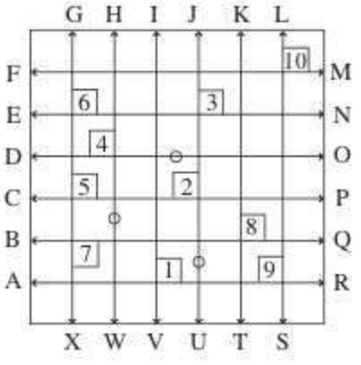
Which is the supreme route from O to W.



Here, we get two convenient routes for O to W *i.e.*, (1) and (2). We will draw a line from O to W and find the nearest route No. 1. Hence our answer will be (1) which is convenient and the best.

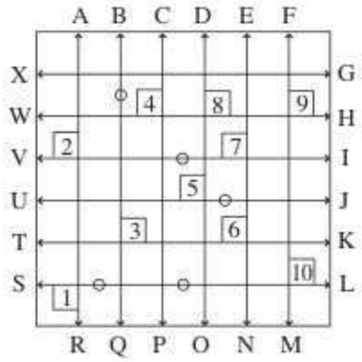
(6) In the answer sheet the number from 1 to 10 is mentioned inside the circle. Simultaneously, the options are also mentioned from 1 to 10. Whatever the route you are selecting. You mark that circle with colour and that is your correct answer.

Exercise 1



1. Which is the best route to reach from A to Q ?
2. Which is the appropriate route to reach from V to F ?
3. Which is the convenient route to reach from X to Q ?
4. Which is the shortest route for B to H ?
5. Select the straight and simplest route for G to N.
6. Select the straight and simplest route for Q to K.
7. Which is the shortest route for J to N ?
8. Which is the convenient route to reach from L to U ?
9. Which is the supreme route to reach from O to J ?
10. Which is the best route to reach from F to R ?

Exercise 2



1. Select the straight route from the point X to P.
2. Which is the justificable route for A to R ?
3. Which is the shortest route for R to F ?
4. Which will be the supreme route for U to P ?
5. Which is the least turnable route to reach from N to V ?
6. Which is the shortest route to reach from M to U.
7. Find out the supreme route for H to T.
8. Which is the supreme route to reach from R to C ?
9. Select the supreme route to reach from O to U.
10. Which is the best route to reach from F to O ?

Answers

Exercise 1

1.	①	②	③	④	⑤	⑥	⑦	⑧	●	⑩
2.	①	②	③	④	●	⑥	⑦	⑧	⑨	⑩
3.	①	②	③	④	⑤	⑥	●	⑧	⑨	⑩
4.	①	②	③	●	⑤	⑥	⑦	⑧	⑨	⑩
5.	①	②	③	④	⑤	●	⑦	⑧	⑨	⑩
6.	①	②	③	④	⑤	⑥	⑦	●	⑨	⑩
7.	①	②	●	④	⑤	⑥	⑦	⑧	⑨	⑩
8.	①	②	③	④	⑤	⑥	⑦	⑧	●	⑩
9.	①	②	●	④	⑤	⑥	⑦	⑧	⑨	⑩
10.	●	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

Exercise 2

1.	①	②	●	④	⑤	⑥	⑦	⑧	⑨	⑩
2.	①	②	③	●	⑤	⑥	⑦	⑧	⑨	⑩
3.	①	②	③	④	⑤	●	⑦	⑧	⑨	⑩
4.	①	②	●	④	⑤	⑥	⑦	⑧	⑨	⑩
5.	①	②	●	④	⑤	⑥	⑦	⑧	⑨	⑩
6.	①	②	●	④	⑤	⑥	⑦	⑧	⑨	⑩
7.	①	②	③	④	⑤	●	⑦	⑧	⑨	⑩
8.	①	②	③	●	⑤	⑥	⑦	⑧	⑨	⑩
9.	①	②	●	④	⑤	⑥	⑦	⑧	⑨	⑩
10.	①	②	③	④	⑤	●	⑦	⑧	⑨	⑩

Memory Test

This is a chapter on psychological test. In these types of question the memory of a candidate is to be checked. On the basis of this chapter 25 questions are asked and 10 minutes are allowed to solve these questions and also to point the boxes.

In such questions two tables are given. Both the tables are on separate pages but not on opposite pages. They are back to back. In the first table there are some figures/signs/designs while the second table contains some letters/words/ numbers. Both the tables are same. The main difference is between figures/signs/designs/and letters/words/numbers. The candidate has to compare both the tables and the answer the questions.

The candidate must give 10 minutes to the separate works. 4 minutes to investigate both the tables, 4 minutes to compare the tables and 2 minutes to paint the boxes.

There are two types of questions :

1. **Type I**— Table 1 → Figures
   Table 2 → Letters
2. **Type II**— Table 1 → Mathematical calculations
   Table 2 → Letters with numbers

Exercise 1

Directions— (Q. 1–25) To solve the given questions, investigate both the tables. The first table contains some pictures while the second table contains some letters in the boxes. Only 10 minutes are allowed to solve them. There are five options for each question. Out of these only one is correct and that is your answer.

Table-I

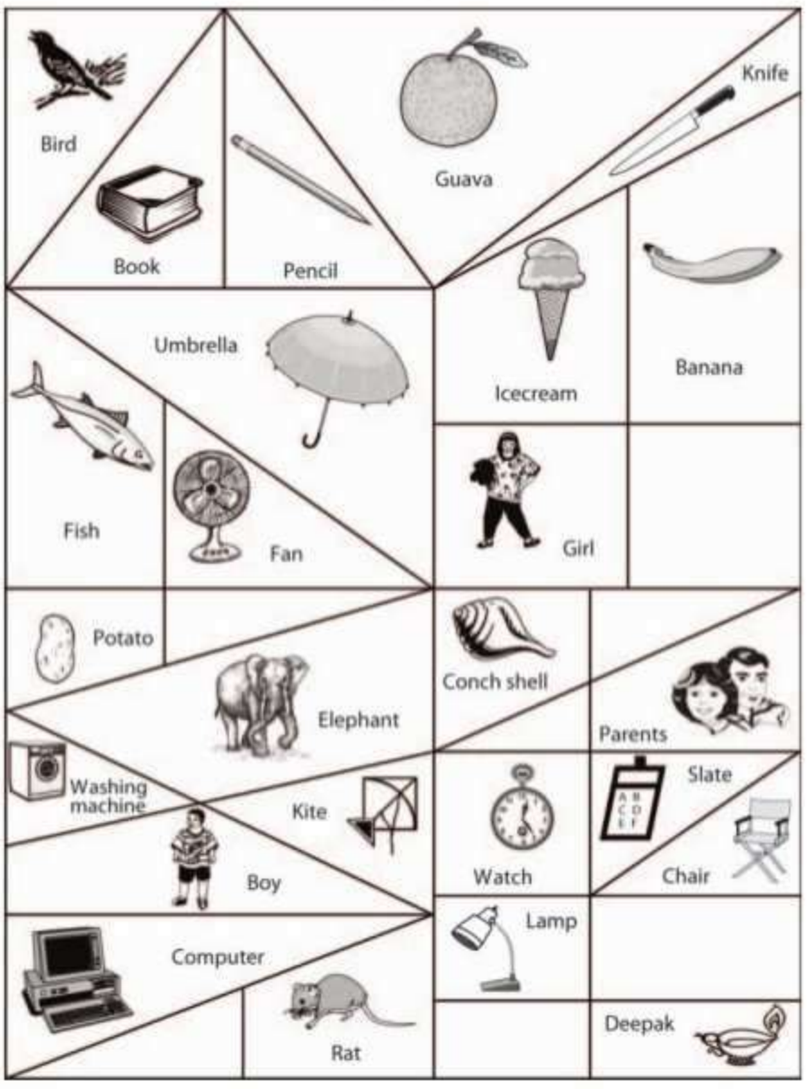
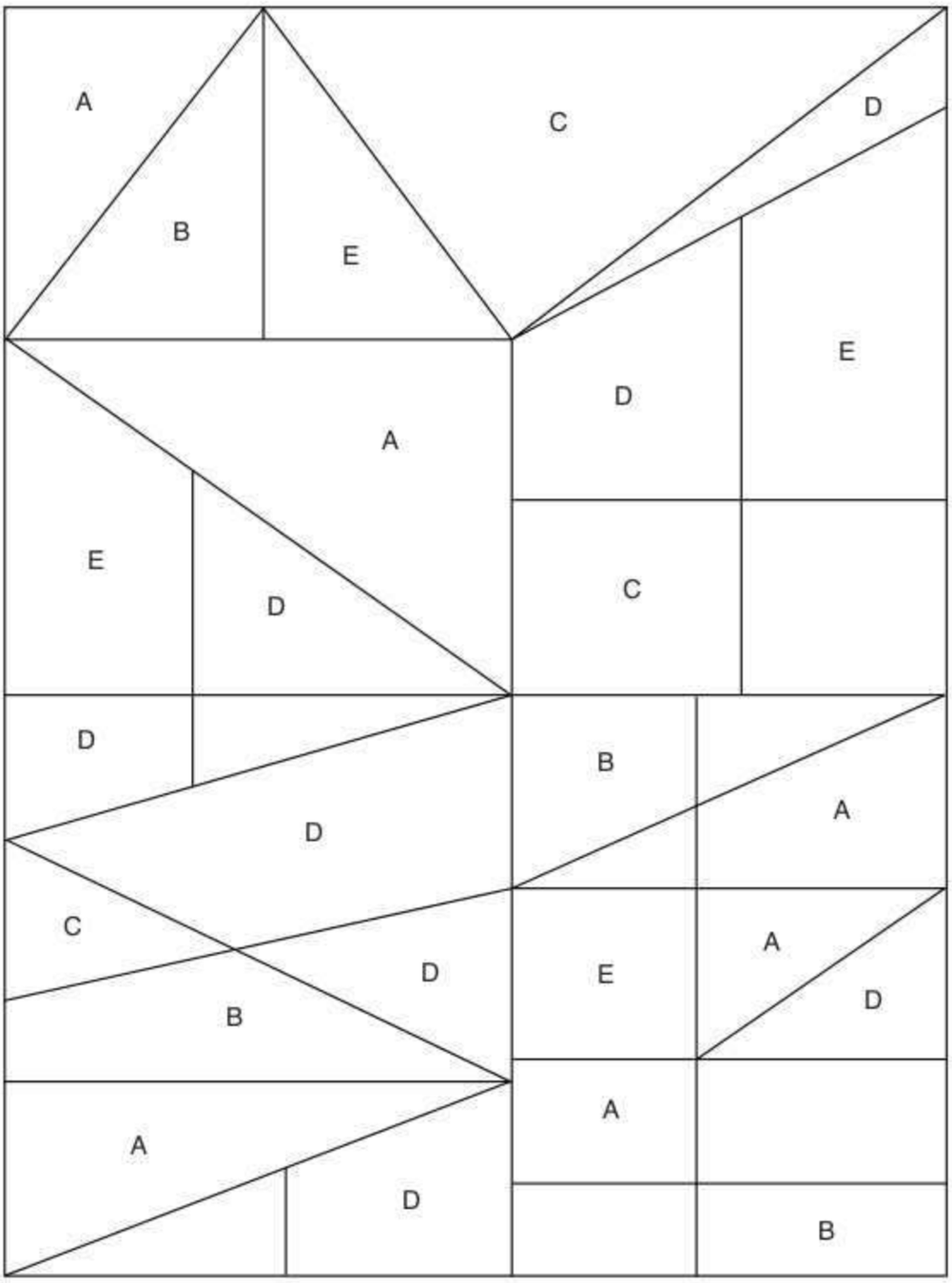


Table-II



Questions :

1. What is the place of Deepak ?
2. What is the place of fish ?
3. What is the place of potato ?
4. Where is the book placed ?
5. Where is the kite flying ?
6. What is the place of the parents ?
7. Where is the computer working ?
8. What is the place of the boy ?
9. What is the place of the knife ?
10. Where is the girl ?
11. Where is the opened umbrella ?
12. What is the place of the watch ?
13. What is the place of elephant ?
14. What is the place of guava ?
15. Where is the washing machine placed ?
16. What is the place of lamp ?
17. What is the place of conch shell ?
18. What is the place of icecream ?
19. Where is the bunch of banana ?
20. Where is the bird sitting ?
21. What is the place of slate ?
22. What is the place of chain ?
23. Where is the pencil placed ?

24. What is the place of fan ?

25. Where is the rat sitting ?

Exercise 2

Directions—(Q. 1–25) Look carefully both the tables and to answer the questions. 10 minutes are allowed to solve these questions. There are five options out of which only one is correct and that is your answer.

Table-I

1+1+1+1+1+1	1+11+111	$\frac{2}{3}+\frac{3}{2}$	18+19+2+1	8+9
$\frac{12+13}{5}$	$\frac{1}{2}+\frac{1}{2}$	5+5+5+5+5+5	22+22	2+3+3+10+1+1
$\frac{6+6+6}{2}$	$\frac{2+2+4}{2}$	6+7+8+10	$\frac{11\times 10}{2}$	2+1+1+1
2+2+2+2	1+2+3+4+5+6	(5+5+5)÷5	$\frac{50+25}{25}$	5+10
$\frac{5}{10}+\frac{5}{10}+5$	22+21+2	5+5+5÷5	8+7+6+1	50+50

Table-II

A = 4	B = 2	C = 6	E = 55	A = 31
C = 17	E = 8	D = 3	D = 22	B = 15
D = 1	A = 44	C = 30	D = 7	E = 5
B = 123	A = 45	C = 6	E = 9	B = 21
$B=\frac{13}{6}$	A = 40	E = 100	C = 20	D = 11

Questions :

1. Which letter comes in place of 1 + 1 + 1 + 1 + 1 + 1 in the table II ?

2. What is the place of 50 + 50 in table II ?

3. Which letter comes in place of $\frac{5}{10}+\frac{5}{10}+5$ in table II ?

4. What is the place of 5 + 5 + 5 ÷ 5 in table II ?

5. By which letter in the table II the solution of 22 + 21 + 2 can be written ?

6. Which letter indicates the solution of 8 + 7 + 6 + 1 in the table II ?

7. What is the place of 5 + 10 in the table II ?

8. By which letter in table II, $\frac{50+25}{25}+4$ will be indicated ?

9. (5 + 5 + 5) ÷ 5 will be indicated by which letter in table II ?

10. What is the place of 1 + 11 + 111 in the table II ?

11. In the table II by which number 6 + 7 + 8 + 10 is represented ?

12. How will be $\frac{2+2+4}{2}$ written in form code?

13. What is the code of $\frac{6+6+6}{2}$?

14. Which letter comes in place of 1 + 2 + 3 + 4 + 5 + 6 ?

15. What is the code of 2 + 2 + 2 + 2 ?

16. What is the code of 2 + 1 + 1 + 1 ?

17. What is the code of $\frac{10\times 11}{2}$?

18. Which letter indicates 2 + 3 + 3 + 10 + 1 + 1 ?

19. What is the code of 22 + 22 ?

20. Which letter indicates $\frac{1}{2}+\frac{1}{2}$?

21. What is the code of $\frac{12+13}{5}$?

22. 8 + 9 is indicated by which letter ?

23. What is the code of 18 + 19 + 2 + 1 ?

24. What is the code of $\frac{2}{3}+\frac{3}{2}$?

25. Which letter will replace 5 + 5 + 5 + 5 + 5 + 5 ?

Answers

Exercise 1

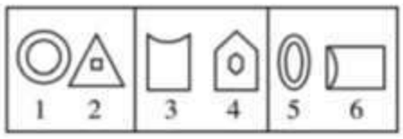
1.	(A)	●	(C)	(D)	(E)
2.	(A)	(B)	(C)	(D)	●
3.	(A)	(B)	(C)	●	(E)
4.	(A)	●	(C)	(D)	(E)
5.	(A)	(B)	(C)	●	(E)
6.	●	(B)	(C)	(D)	(E)
7.	●	(B)	(C)	(D)	(E)
8.	(A)	●	(C)	(D)	(E)
9.	(A)	(B)	(C)	●	(E)
10.	(A)	(B)	●	(D)	(E)
11.	●	(B)	(C)	(D)	(E)
12.	(A)	(B)	(C)	(D)	●
13.	(A)	(B)	(C)	●	(E)
14.	(A)	(B)	●	(D)	(E)
15.	(A)	(B)	●	(D)	(E)
16.	●	(B)	(C)	(D)	(E)
17.	(A)	●	(C)	(D)	(E)
18.	(A)	(B)	(C)	●	(E)
19.	(A)	(B)	(C)	(D)	●
20.	●	(B)	(C)	(D)	(E)
21.	●	(B)	(C)	(D)	(E)
22.	(A)	(B)	(C)	●	(E)
23.	(A)	(B)	(C)	(D)	●
24.	(A)	(B)	(C)	●	(E)
25.	(A)	(B)	(C)	●	(E)

Continued on Page 232

Classification of Figures of Same Characteristics

In this type of test, 6 to 9 figures are given. All these figures are classified among three groups or classes based upon some common qualities. The candidate is to find the group in which these figures can be classified.

Example 1.



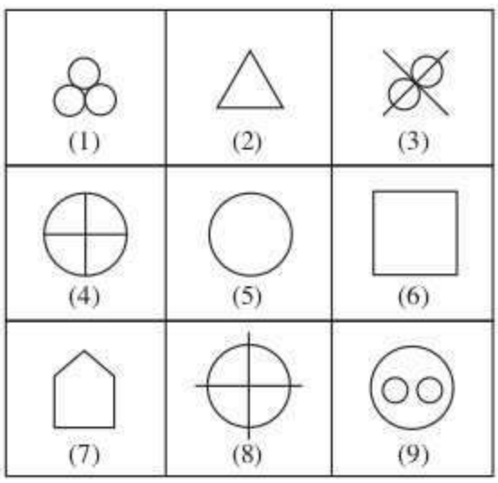
(A)	(B)	(C)	(D)
1, 5 2, 4 3, 6	1, 2 3, 6 4, 5	1, 5 2, 3 4, 6	1, 4 2, 5 3, 6

Answer with Explanation : (A) In figure (1) and (5), there are two similar designs made by curved lines. In figure (2) and (4), there are two designs made by two dissimilar straight lines, while in other figures, the designs are made by straight and curved lines. Hence, all these figures are classified in separate groups.

Exercise

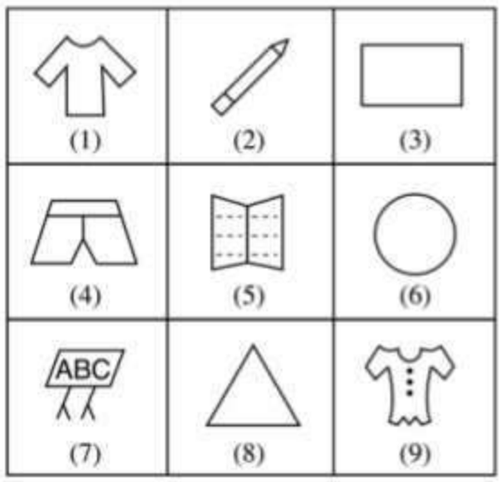
Directions—(Q. 1–3) A series of various figures are given which can be classified in groups. Find out the appropriate groups in which these figures can be classified.

1.



(A) (1, 2, 3); (4, 5, 6); (7, 8, 9)
(B) (3, 6, 9); (1, 5, 8); (2, 4, 7)
(C) (5, 6, 9); (4, 7, 8); (1, 2, 3)
(D) (1, 5, 9); (3, 4, 8); (2, 6, 7)

2.



(A) 1, 4, 9
2, 5, 7
3, 6, 8

(B) 1, 4, 9
2, 3, 8
5, 6, 7

(C) 1, 4, 9
2, 5, 8
3, 6, 7

(D) 1, 4, 9
2, 3, 6
5, 7, 8

3.

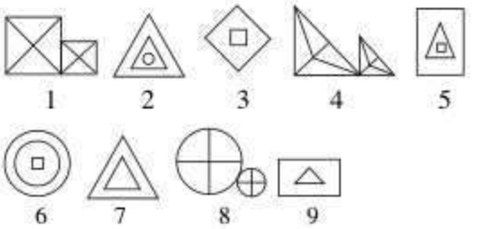
A	M	B	H	W	D
1	2	3	4	5	6

E	N	U
7	8	9

(A) 136, 289, 475
(B) 148, 236, 579
(C) 148, 257, 369
(D) 147, 358, 269

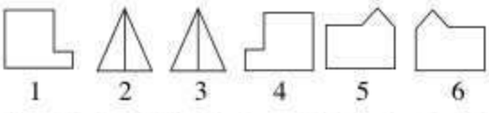
Directions—(Q. 3 and 4) Classify the figures among three groups by using each of the figures once.

4.



(A) 1, 3, 7 : 2, 4, 6 : 5, 8, 9
(B) 1, 4, 6 : 2, 5, 7 : 3, 8, 9
(C) 1, 4, 8 : 2, 5, 6 : 3, 7, 9
(D) 1, 4, 8 : 2, 7, 9 : 3, 5, 6

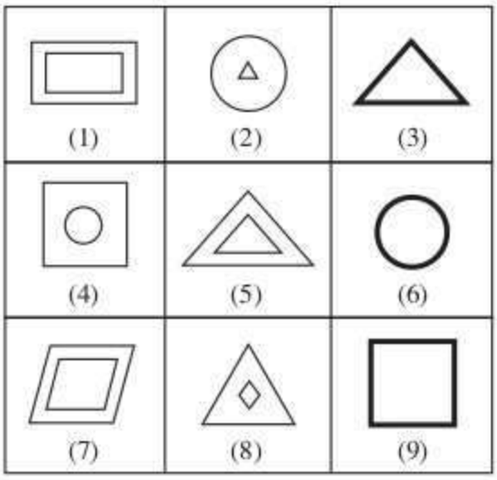
5.



(A) (1, 4); (2, 3); (5, 6)
(B) (1, 5); (2, 6); (4, 3)
(C) (1, 6); (2, 3); (4, 5)
(D) (1, 2); (3, 6); (4, 5)

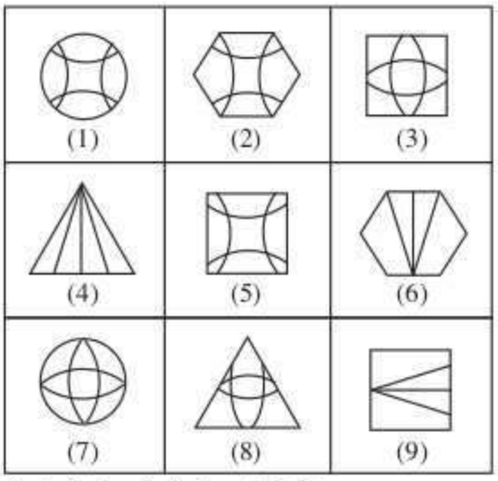
Directions—(Q. 6–10) In each of the questions, classify the figures among three groups by using each figure once.

6.



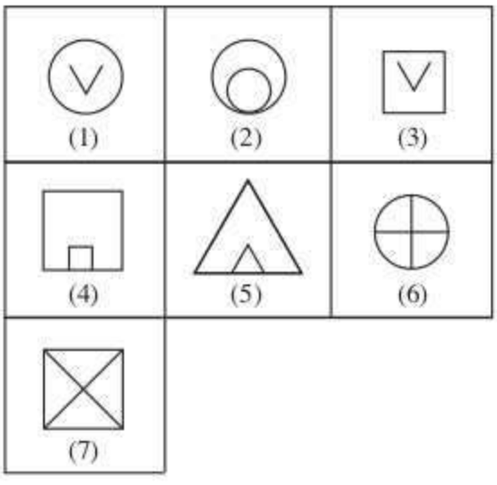
(A) 1, 5, 7; 2, 4, 6; 3, 9, 8
(B) 1, 5, 7; 2, 4, 8; 3, 6, 9
(C) 1, 5, 7; 4, 9, 8; 2, 3, 6
(D) 1, 5, 7; 3, 8, 9; 2, 4, 6

7.



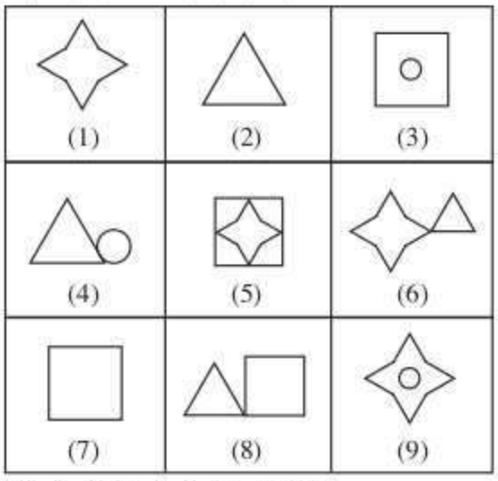
(A) 1, 2, 5; 3, 7, 8; 4, 6, 9
(B) 1, 7, 2; 3, 9, 6; 4, 5, 8
(C) 2, 3, 8; 4, 6, 9; 1, 5, 7
(D) 5, 6, 9; 3, 4, 1; 2, 7, 8

8.



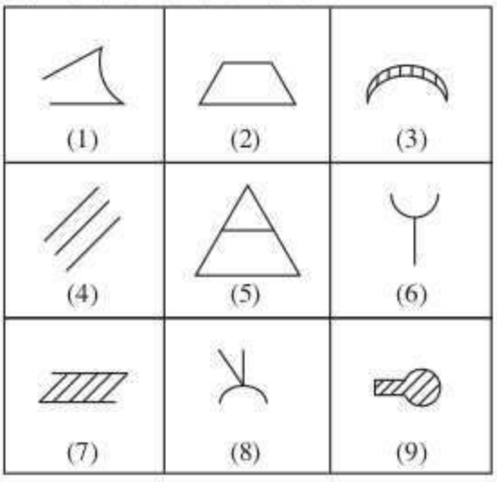
(A) 1, 2, 6; 3, 4, 7; 5
(B) 1, 3; 2, 6; 4, 5, 7
(C) 1, 2, 6, 7; 3; 4, 5
(D) 1, 3; 2, 4, 5; 6, 7

9.



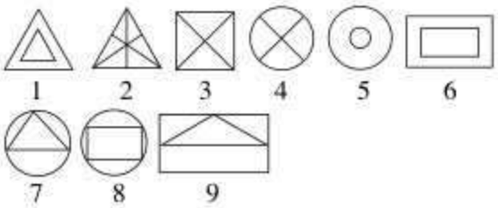
(A) 3, 4, 9; 5, 7, 8; 1, 2, 6
(B) 1, 5, 6; 2, 4, 8; 3, 7, 9
(C) 4, 6, 8; 3, 5, 7; 1, 2, 9
(D) 1, 2, 7; 3, 5, 9; 4, 6, 8

10.



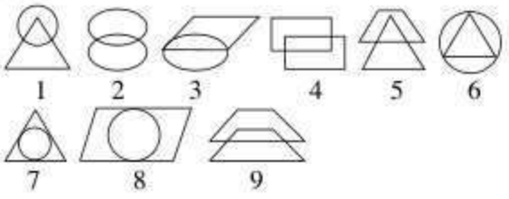
(A) 1, 3, 6; 4, 5, 8; 2, 7, 9
(B) 2, 3, 9; 4, 5, 8; 1, 6, 7
(C) 1, 6, 8; 3, 7, 9; 2, 4, 5
(D) 3, 8, 9; 1, 2, 7; 4, 5, 6

11.



(A) 1, 2, 3; 4, 5, 8; 6, 7, 9
(B) 1, 5, 6; 2, 3, 4; 7, 8, 9
(C) 1, 3, 5; 2, 4, 8; 6, 7, 9
(D) 1, 4, 7; 2, 5, 8; 3, 6, 9

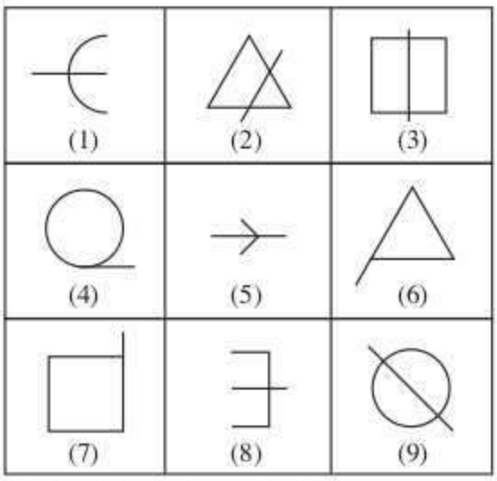
12.



(A) 1,5,9; 2,7,8; 3,4,6
(B) 3,7,8; 4,5,9; 1,2,6
(C) 2,4,9; 6,7,8; 1,3,5
(D) 1,5,6; 4,7,8; 2,3,9

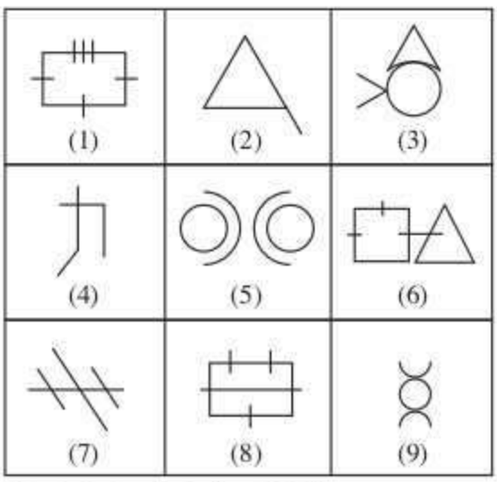
Directions—(Q. 13–18) The following given series of figures can be classified in various groups. Find out the alternative in which the figures are classified in clear groups.

13.



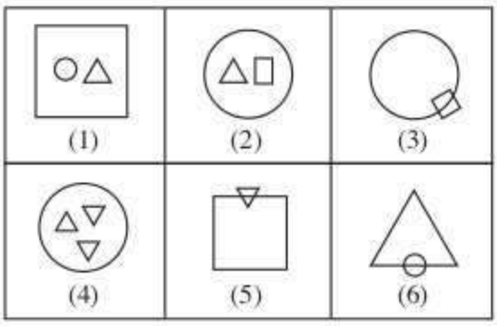
(A) 1,4,9; 2,6,5; 3,7,8
(B) 1,5,8; 2,3,9; 4,6,7
(C) 3,5,6; 7,9,1; 2,4,8
(D) 4,3,6; 2,1,5; 8,7,9

14.



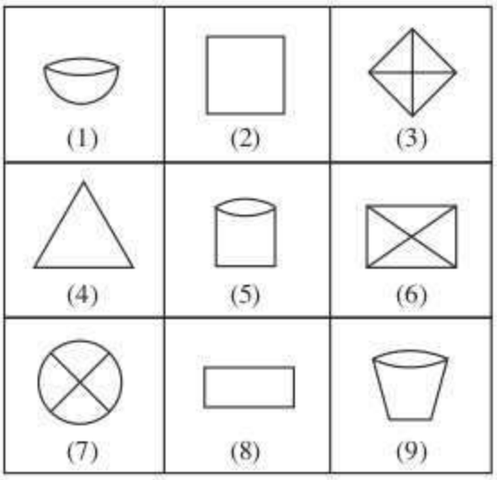
(A) 6,4,7; 1,2,8; 3,5,9
(B) 1,6,8; 2,7,4; 3,5,9
(C) 3,6,9; 1,8,4; 2,5,7
(D) 2,3,6; 1,4,8; 5,7,9

15.



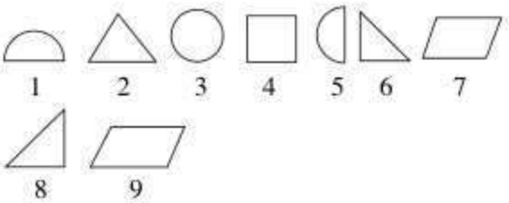
(A) (2, 3, 4) (1, 5, 6) (B) (1, 5), (2, 3, 4, 6)
(C) (1, 2, 4), (3, 5, 6) (D) (3, 6), (1, 2, 4, 5)

16.



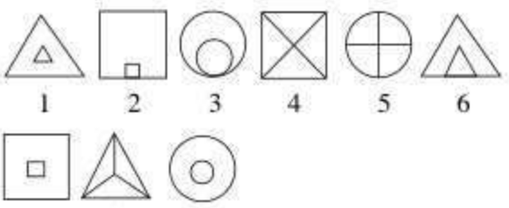
(A) 1, 2, 4; 3, 5, 6; 7, 8, 9
(B) 2, 3, 8; 1, 5, 6; 4, 7, 9
(C) 1, 7, 9; 2, 6, 8; 3, 4, 5
(D) 2, 4, 8; 3, 6, 7; 1, 5, 9

17.



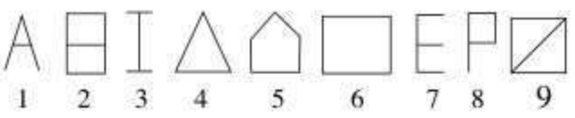
(A) 1, 3, 5; 2, 6, 9; 4, 7, 8
(B) 2, 3, 4; 5, 6, 8; 9, 1, 7
(C) 1, 3, 5; 2, 6, 8; 4, 7, 9
(D) 3, 2, 4; 6, 5, 8; 7, 9, 1

18.



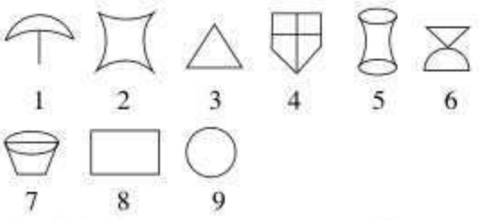
(A) 1, 7, 9; 2, 3, 6; 4, 5, 8
(B) 1, 2, 9; 3, 4, 6; 5, 7, 8
(C) 1, 6, 8; 2, 4, 7; 3, 5, 9
(D) 1, 7, 8; 2, 9, 3; 6, 4, 5

19. The following designs have given the sequence of figures which can be classified into groups. Select the group in which the figures can be classified—



(A) 1, 3, 4; 2, 5, 9; 6, 7, 8
(B) 1, 2, 3; 4, 5, 6; 7, 8, 9
(C) 1, 5, 9; 2, 4, 7; 3, 6, 8
(D) 3, 7, 8; 1, 6, 5; 4, 2, 9

20. The following designs have given the sequence of figures which can be classified into groups. Select the group from the given options in which these figures can be classified—



(A) 2,5,9 3,6,8 1,4,7
(B) 1,6,7 3,5,8 2,4,9
(C) 2,5,9 3,4,8 1,6,7
(D) 1,3,8 2,4,6 5,7,9

Answers with Explanations

1. (D) Figures 1,5 and 9 → Designs made of circle
   Figures 3,4 and 8 → Designs made of circle and line
   Figures 2,6 and 7 → Designs made of lines
2. (A) Figures 1,4 and 9 → Clothes
   Figures 2,5 and 7 → Educational material
   Figures 3,6 and 8 → Geometrical designs
3. (C) Figure no. 1, 4 and 8 are made of three lines. Figure no. 3, 6, and 9 are made of curves and figure No. 2, 5 and 7 are made of four lines.
4. (C) In 1, 4 and 8 there are two similar figures in which one is large while another is small and they are close to each other. In 2, 5 and 6 in each of the figures there is three figures inside one by one and in figure 3, 7 and 9 one small figure is inside large figure.
5. (A) In the group of 1 and 4, 2 and 3 and 5 and 6 the figures are same.
6. (B) In the figures 1, 5, 7 the designs are identical in which the small design is inside the large design. In the figures 2, 4, 8 the designs are dissimilar in which one design is inside the second design and in 3, 6, 9 the designs are dark-printed.
7. (A) In the figures 1, 5 and 7 identical designs are made in different designs, in 3, 7 and 8 similar designs are made in different designs and in 4, 6 and 9 the triangles with the middle line are made in different designs.
8. (D) In 1 and 3 a V-shaped design is made in various different designs. In 2, 4, 5 there are similar designs in which one design is placed within the second design and in 6 and 7 two parallel lines are made in different designs.
9. (D) In 1, 2 and 7 there is only one design in each of the figures. In 3, 5 and 9 two different designs are intermingled to each other and in 4, 6 and 9 two different designs are touching to each other.
10. (C) In 1, 6 and 8 the designs are made of two curved and one straight line. In 3, 7 and 9 there are shaded designs and in 2, 4 and 5 the designs are made of straight lines.
11. (B) In 1, 5 and 6 two similar designs are placed to each other. In 2, 3 and 4 the straight lines bifurcated the whole design in two equal parts and in 7, 8 and 9 one design is placed within another design.
12. (C) In 2, 4 and 9 two similar designs intersect each other. In 6, 7 and 8 a design is placed in another different kind of design and in 1, 3 and 5 two different designs intersect each other.
13. (B) In 1, 5 and 8 a straight line goes through the open design. In 2, 3 and 9 a straight line goes through the closed design and in 4, 6 and 7 a line touches the border of closed design.
14. (B) In 1, 6 and 8, a straight line is used. In 2, 4 and 7 four straight lines are used and in 3, 5 and 9 curved lines are used.
15. (C) In 1, 2 and 4 some designs are made in one design. In 3, 5 and 6 a design intersects another design.
16. (D) In 3, 6 and 7 two parallel lines are drawn in a design. In 2 ,4 and 8 the designs are made of straight lines and in 1, 5 and 9 curved lines are used.
17. (C) In 1, 5 and 9 the designs are either circular or semicircular in 2, 6 and 8 the designs are triangular and in 4, 7 and 9 the designs are quadrangular.
18. (A) In 1, 7 and 9 design is smaller and similar made in large but they are not touching each other design. In 2, 3 and 6 a smaller and similar design is made in large design and touching each other and in 4, 5 and 8 the straight lines are drawn within the designs.
19. (A) In 1, 3 and 4 each of the designs is made of three straight lines. In 2, 5 and 9 each design is made of five straight lines while in 6, 7 and 8 each design is made of four straight lines.
20. (C) In 2, 5 and 9 the designs are made of curved lines. In 3, 4 and 8 the designs are made of straight lines and in 1, 6 and 7 the designs are made of straight lines and curved lines.

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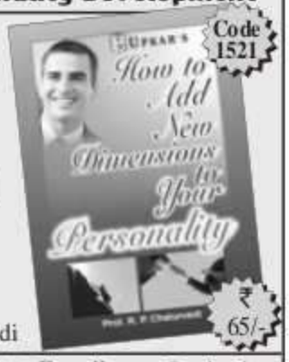

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Similar Figure

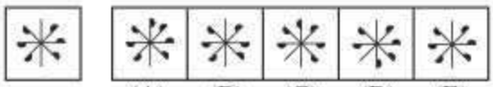
In this type of questions one question figure is given and this is followed by five answer figures. Only one of the answer figures is exactly same as the question figure. The candidate has to find that figure among the answer figures which is exactly same to the question figure.

Exercise

Directions—(Q. 1–40) In each of the following questions, there is only one question figure and five answer figures. Choose which of the answer figure is same as that of question figure and that letter is your answer.

Question Figure **Answer Figures**

1.
(A) (B) (C) (D) (E)

2. 
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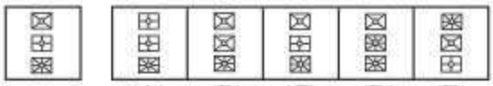
3. 
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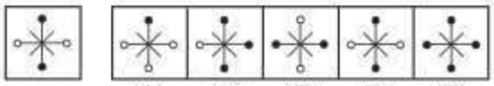
4. 
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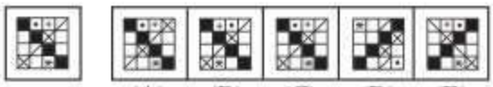
5. 
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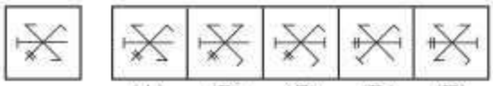
6. 
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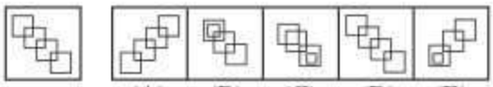
7. 
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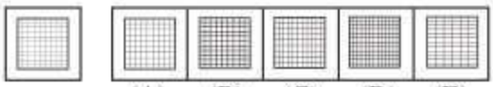
8. 
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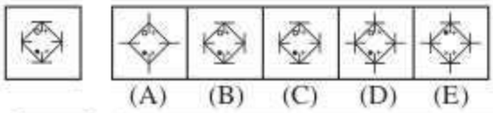
9. 
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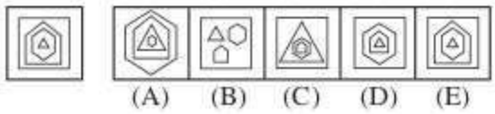
10. 
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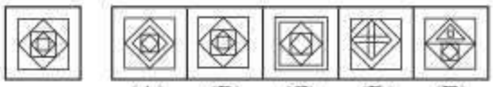
11. 
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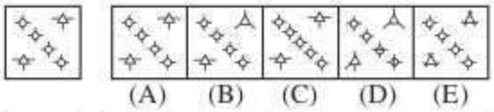
12. 
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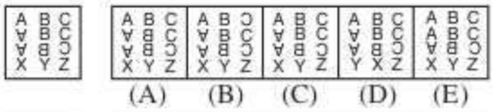
13. 
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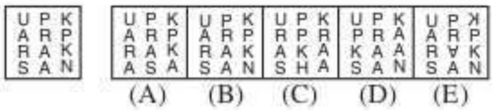
14. 
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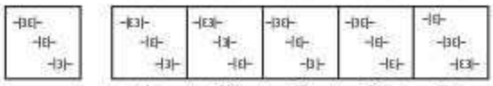
15. 
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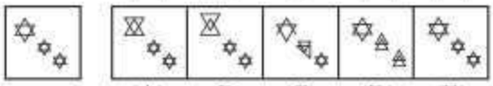
16. 
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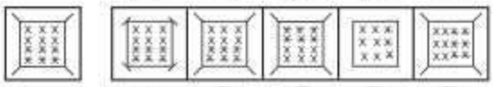
17. 
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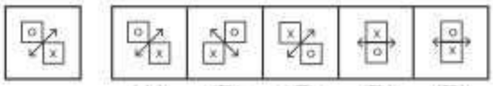
18. 
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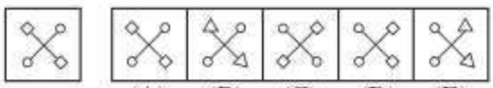
20. 
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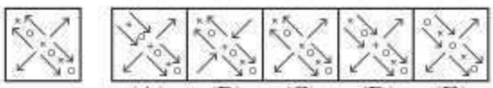
21. 
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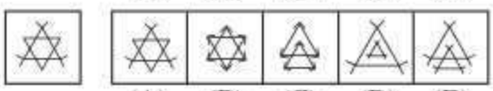
23. 
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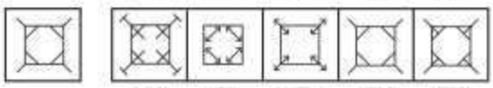
24. 
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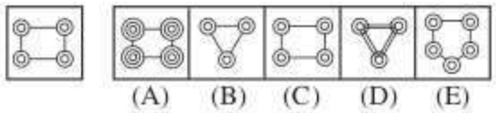
25. 
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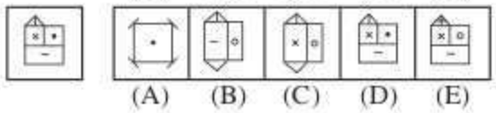
26. 
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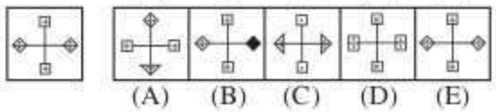
28. 
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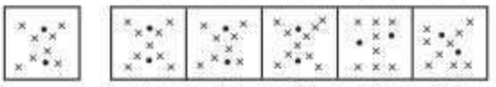
29. 
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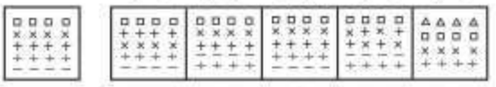
30. 
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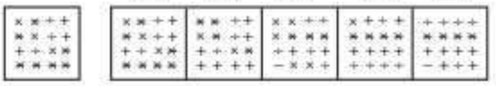
31. 
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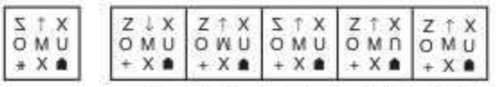
32. 
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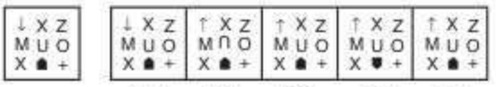
33. 
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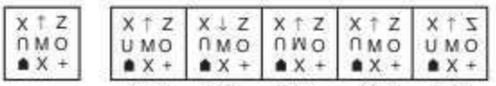
34. 
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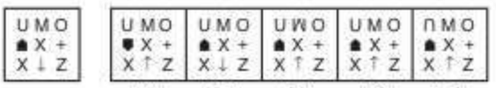
35. 
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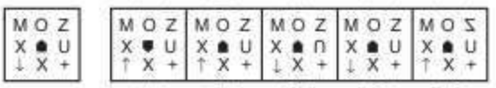
36. 
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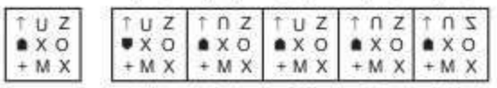
37. 
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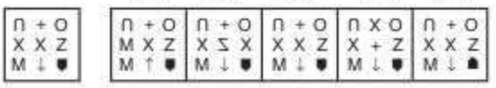
38. 
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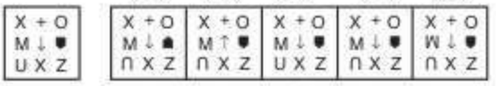
39. 
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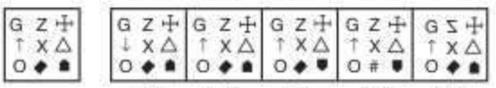
40. 
(A) (B) (C) (D) (E)

Answers

1. (A)	2. (E)	3. (C)	4. (D)	5. (C)
6. (A)	7. (D)	8. (B)	9. (B)	10. (E)
11. (B)	12. (A)	13. (C)	14. (B)	15. (C)
16. (E)	17. (B)	18. (A)	19. (D)	20. (A)
21. (C)	22. (E)	23. (A)	24. (D)	25. (C)
26. (D)	27. (A)	28. (E)	29. (B)	30. (C)
31. (A)	32. (C)	33. (A)	34. (D)	35. (B)
36. (D)	37. (C)	38. (C)	39. (C)	40. (B)

Continued from Page 144

17. (B) Chetan > Asha > Babu
and Dimple > Esha > Chetan
Hence, Dimple is the tallest in the group.

18. (A) A < X, Y = B, Z < C, Z < B, Y < A
$\therefore$ X > A > Y = B > Z > C
Hence, X is the best knowledgeable person.

19. (D) Since only Q reached after R and S, hence P and T reached after T so the last person to reach can not be determined.

20. (D) 21. (D)

22. (E) • 13 + •
F D
$\longrightarrow$ + 8
$x + 13 - x + 8 - x = 20$
$\Rightarrow \quad x = 1$
The number of boys between D and F is 1.

23. (A) N > P and M > T, G
$\therefore$ P secured the least marks.

24. (D) The correct order is :
Soil Seed Plant Flower Fruit
3 1 4 2 5

25. (C) The correct order is :
Soil Plant Cotton Yarn Cloth Shirt
3 6 2 1 4 5

26. (D) The correct order is :
Seed Sowing Fertilizer Cotton Yarn Cloth
6 2 4 3 1 5

27. (B) The correct order is :
Students Books Stuty Examination Result
4 2 1 3 5

28. (A) The correct order is :
Disease Doctor Diagnosis Medicine Treatment
3 2 4 5 1

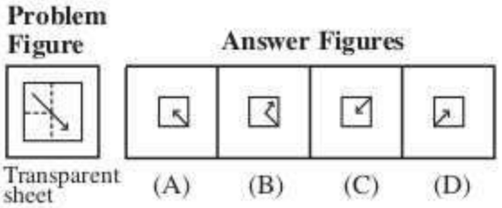
29. (D) The correct order is :
Seed Fertilizer Plant Leaf Flower
3 2 1 4 5

30. (C) The correct order is :
Advertisement Application Interview Selection
5 6 2 3
Appointment Probation
4 1

Paper Folding

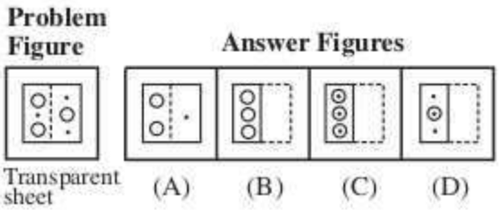
This type of questions are based on a transparent sheet. Some marks are made on the transparent sheet and a dotted line is made on the sheet. Then this sheet is folded along the dotted line. Four answer figures are also given with this problem figure. The candidate has to find out that figure among the answer figures, which resembles the pattern formed when the transparent sheet carrying a design is folded along the dotted line.

Example 1.



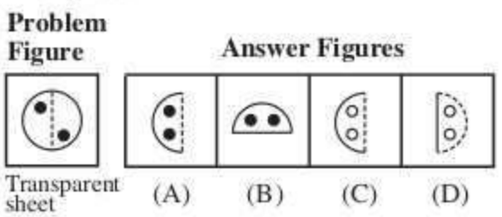
Answer with Explanation : (A) If the problem figure the arrow indicates the mark on the transparent sheet. The vertical dotted line shows the first fold while the horizontal dotted lines represents the second fold. Thus in folding the transparent sheet we will get the figure as shown in answer figure (A).

Example 2.



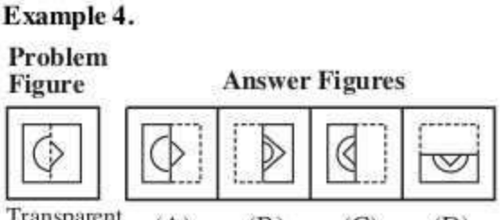
Answer with Explanation : (C) On folding the transparent sheet along dotted line, all the points, will go inside the circles. Hence the answer is (C).

Example 3.



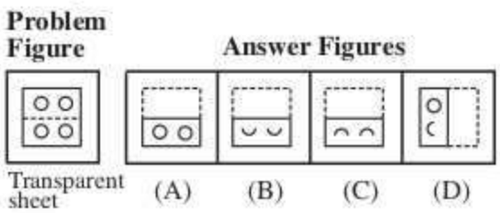
Answer with Explanation : (A) On folding the transparent sheet along the dotted line the left half will overlap the right half and consequently the black circle on the left will appear on the right. Hence the answer is (A).

Example 4.



Answer with Explanation : (C) On folding the transparent sheet along the dotted line the left half will overlap the right half and consequently the triangle on the left will go inside the semicircle. Hence the answer is (C).

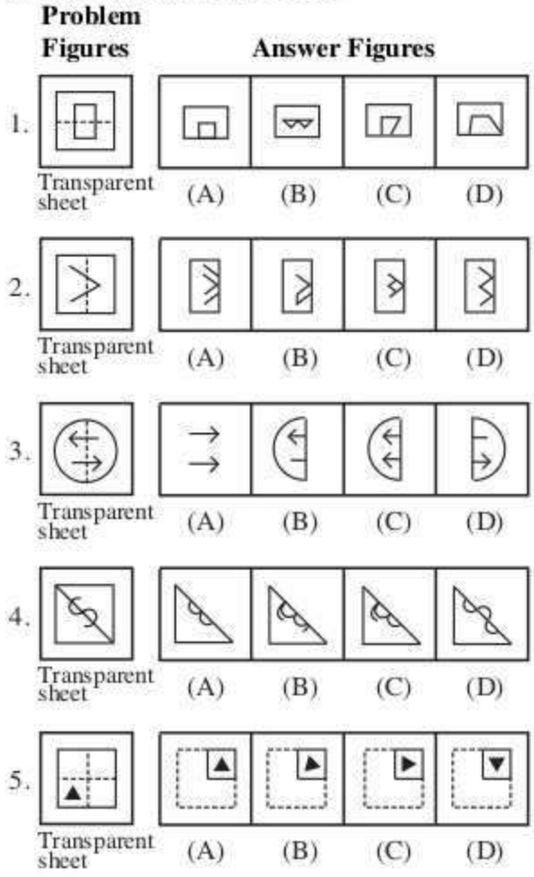
Example 5.



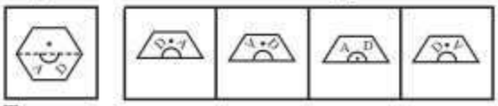
Answer with Explanation : (A) On folding the transparent sheet along the dotted line the upper half will overlap the lower half and consequently both the upper circle will overlap the lower circles. Hence the answer is (A).

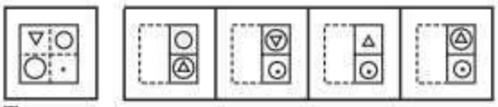
Exercise

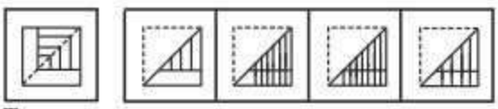
Directions— (Q. 1–40) In each of the following questions a square transparent sheet with a pattern is given. Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded along the dotted line.

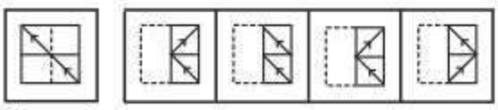


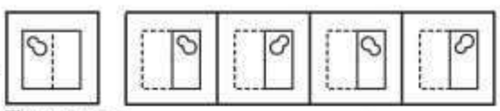
Problem Figures **Answer Figures**

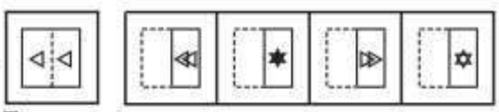
6. 
Transparent sheet (A) (B) (C) (D)

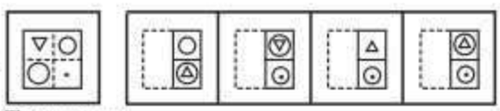
7. 
Transparent sheet (A) (B) (C) (D)

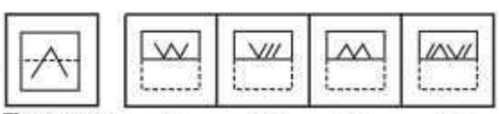
8. 
Transparent sheet (A) (B) (C) (D)

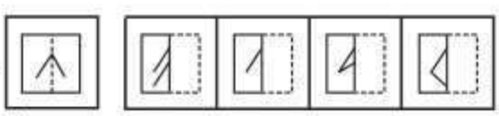
9. 
Transparent sheet (A) (B) (C) (D)

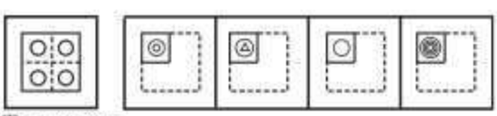
10. 
Transparent sheet (A) (B) (C) (D)

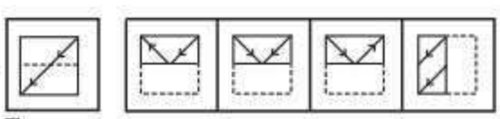
11. 
Transparent sheet (A) (B) (C) (D)

12. 
Transparent sheet (A) (B) (C) (D)

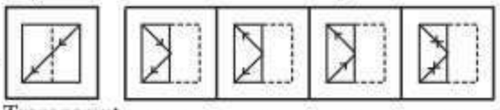
13. 
Transparent sheet (A) (B) (C) (D)

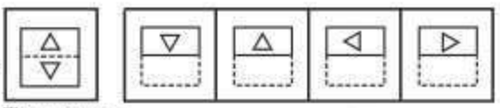
14. 
Transparent sheet (A) (B) (C) (D)

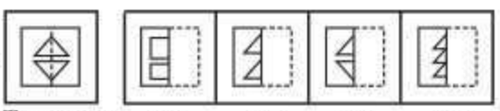
15. 
Transparent sheet (A) (B) (C) (D)

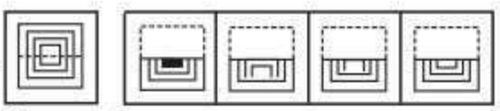
16. 
Transparent sheet (A) (B) (C) (D)

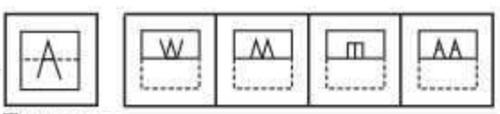
Problem Figures **Answer Figures**

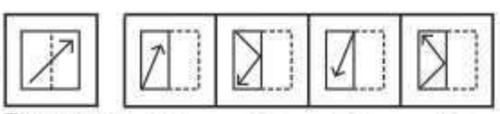
17. 
Transparent sheet (A) (B) (C) (D)

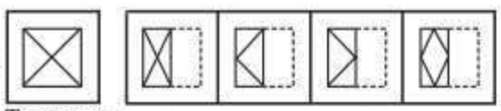
18. 
Transparent sheet (A) (B) (C) (D)

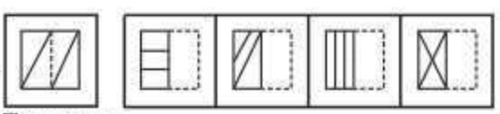
19. 
Transparent sheet (A) (B) (C) (D)

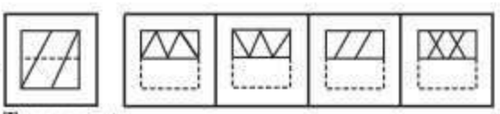
20. 
Transparent sheet (A) (B) (C) (D)

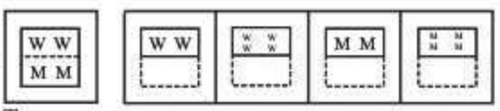
21. 
Transparent sheet (A) (B) (C) (D)

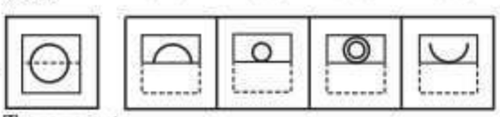
22. 
Transparent sheet (A) (B) (C) (D)

23. 
Transparent sheet (A) (B) (C) (D)

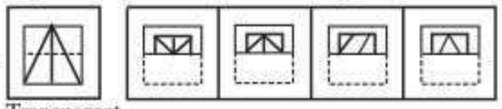
24. 
Transparent sheet (A) (B) (C) (D)

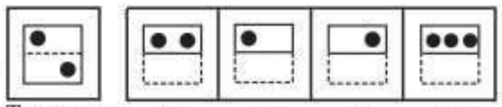
25. 
Transparent sheet (A) (B) (C) (D)

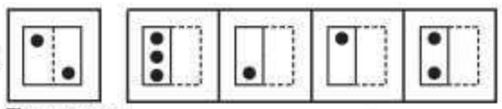
26. 
Transparent sheet (A) (B) (C) (D)

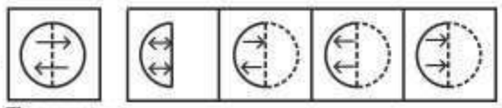
27. 
Transparent sheet (A) (B) (C) (D)

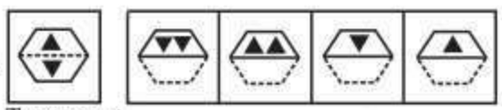
Problem Figures **Answer Figures**

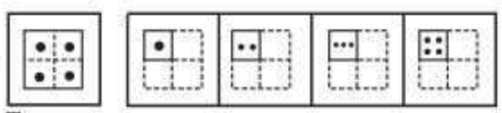
28. 
Transparent sheet (A) (B) (C) (D)

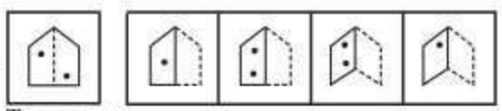
29. 
Transparent sheet (A) (B) (C) (D)

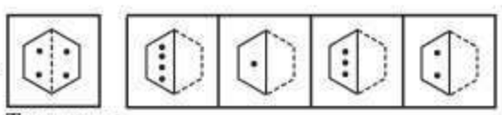
30. 
Transparent sheet (A) (B) (C) (D)

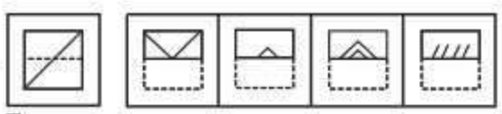
31. 
Transparent sheet (A) (B) (C) (D)

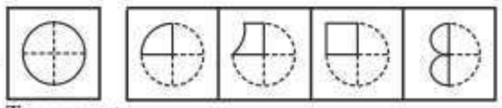
32. 
Transparent sheet (A) (B) (C) (D)

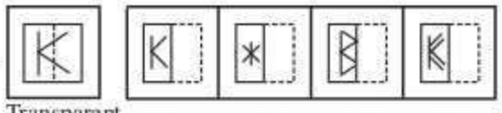
33. 
Transparent sheet (A) (B) (C) (D)

34. 
Transparent sheet (A) (B) (C) (D)

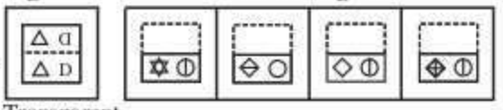
35. 
Transparent sheet (A) (B) (C) (D)

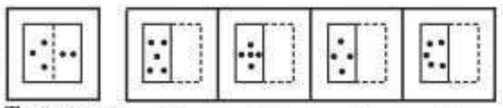
36. 
Transparent sheet (A) (B) (C) (D)

37. 
Transparent sheet (A) (B) (C) (D)

38. 
Transparent sheet (A) (B) (C) (D)

Problem Figures **Answer Figures**

39. 
Transparent sheet (A) (B) (C) (D)

40. 
Transparent sheet (A) (B) (C) (D)

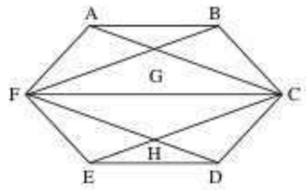
Answers

1. (A)	2. (C)	3. (C)	4. (A)	5. (D)
6. (B)	7. (B)	8. (A)	9. (A)	10. (B)
11. (D)	12. (B)	13. (A)	14. (B)	15. (C)
16. (A)	17. (A)	18. (B)	19. (C)	20. (D)
21. (A)	22. (D)	23. (C)	24. (D)	25. (B)
26. (A)	27. (A)	28. (B)	29. (A)	30. (D)
31. (C)	32. (D)	33. (A)	34. (B)	35. (D)
36. (A)	37. (A)	38. (C)	39. (A)	40. (C)

Continued from Page 184

18. (C) In the given figure, there are 22 triangles—
(1) AIJ (2) GHI (3) DEF
(4) BCD (5) AJK (6) DJK
(7) BDK (8) ABK (9) GJL
(10) FGL (11) DFL (12) DJL
(13) ABJ (14) ADJ (15) BDJ
(16) ABD (17) DGJ (18) FGJ
(19) DFG (20) DFJ (21) ADG
(22) BFJ.

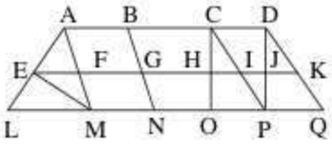
19. (D) In the given figure, there are 6 pentagons—



(1) ABCHF (2) BCDEF (3) ACDEF
(4) ABCEF (5) ABCDF (6) CDEFG

20. (D) In the given figure, there are 11 quadrilaterals.

21. (D) In the given figure, there are 11 triangles—



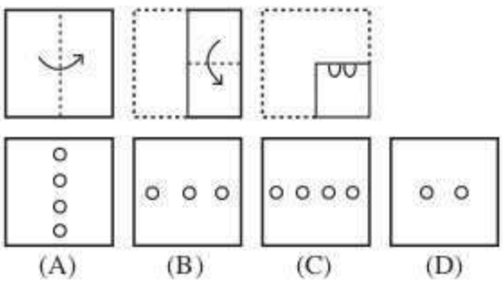
(1) AEF (2) EFM (3) AEM
(4) ELM (5) ALM (6) COP
(7) CDP (8) DPQ (9) CHI
(10) IJP (11) DJK

●●●

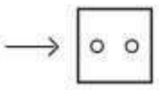
Paper Cutting and Punching

In this type of questions, three or four figures are given in one line. In first figure a paper sheet is shown in any shape and size. In second figure, it is shown by folding it in two parts. The part which is covered on other by folding is shown by dotted lines. The arrow shows the direction of their fold. In third figure, it is again folded in two parts and some of its part is cut or punched according to diagram. Then after it, it is unfolded. The diagram so obtained is one of the four alternatives given below. The candidate has to find which one of the four alternatives most closely resembles the pattern when unfolded.

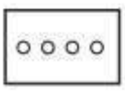
Example 1.



Answer with Explanation : (C) The following figure will be obtained when figure in (3) is opened at one fold.

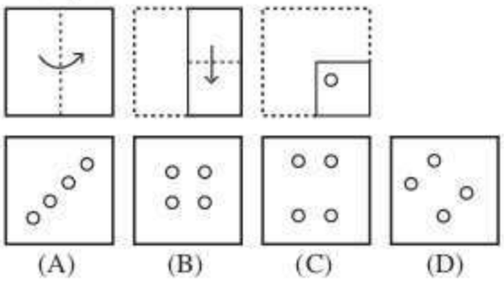


The following figure will be obtained when the above figure is opened at the second fold.



This figure resembles with (C) among the four alternatives. Hence the correct answer is (C).

Example 2.

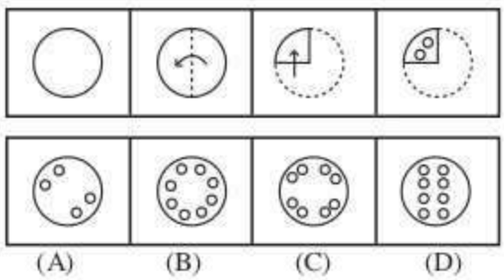


Answer with Explanation : (B) The following figure will be obtained when figure in (3) is opened at one fold.

The following figure will be obtained when the above figure is opened at the second fold.

This figure resembles with (B) among the four alternatives. Hence the correct answer is (B).

Example 3.

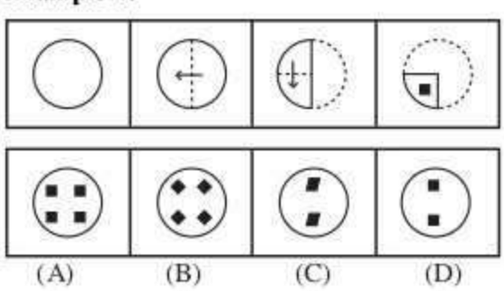


Answer with Explanation : (B) The following figure will be obtained when the last figure is opened at one fold.

When the above figure is opened at second fold the following figure will be obtained :

This figure resembles with (B) among the four alternatives. Hence the correct answer is (B).

Example 4.

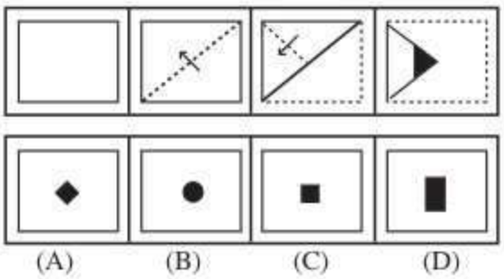


Answer with Explanation : (A) When the last figure is opened at one fold, the following figure will be obtained :

When the above figure is opened at second fold, the following figure will be obtained :

This figure resembles with (A) among the four alternatives. Hence the correct answer is (A).

Example 5.

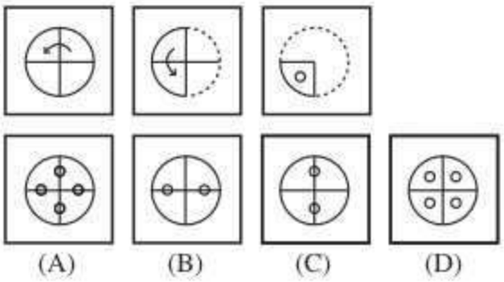


Answer with Explanation : (C) When the figure is opened at one fold and then at second fold, the figure obtained will resemble with figure (C) among the alternatives. Hence the correct answer (C).

Exercise

Directions—(Q. 1–45) Each of the questions a piece of sheet is folded and cut and then unfolded. One of the four alternative figures marked (A), (B), (C) and (D) exactly resembles the unfolded paper. Select this figure.

1.



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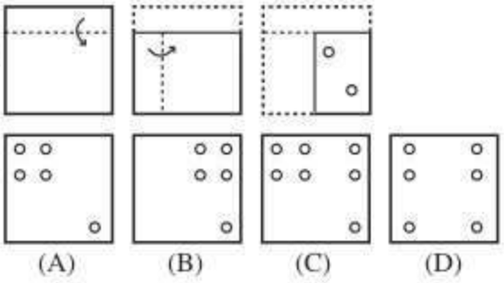

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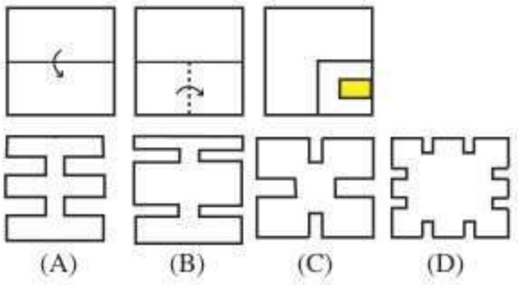

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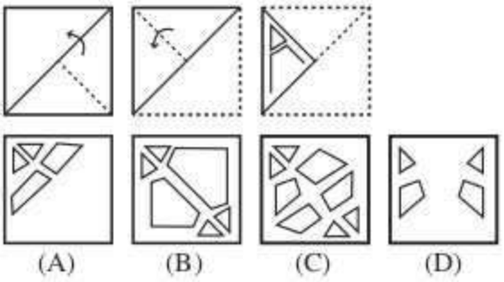

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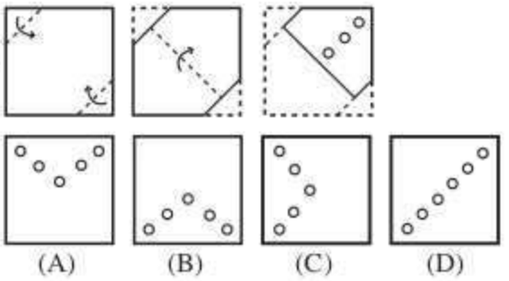

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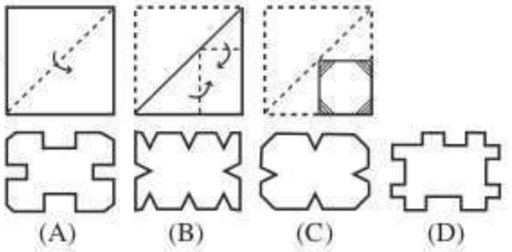

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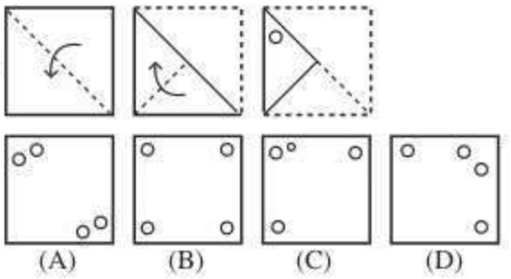

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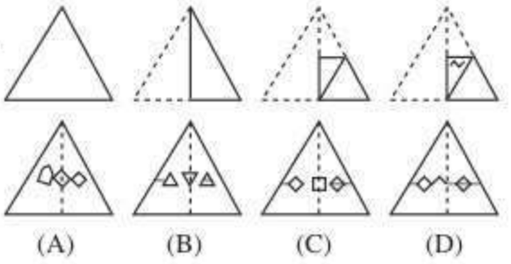

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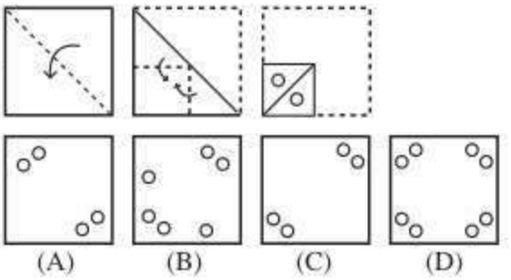

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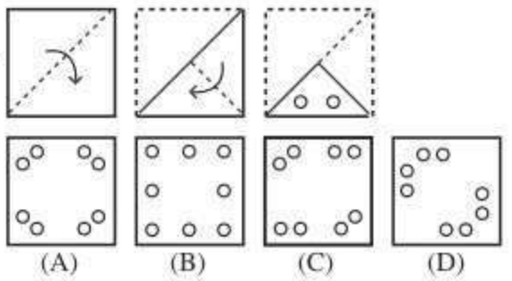

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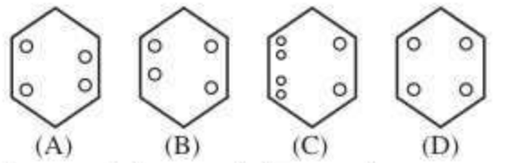

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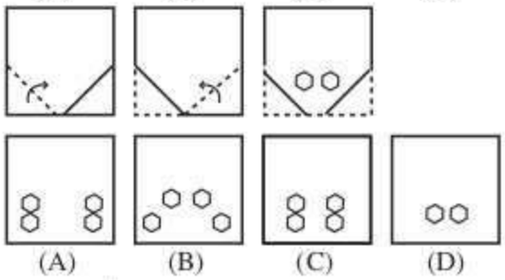

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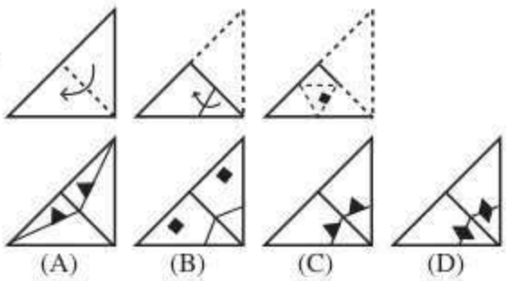

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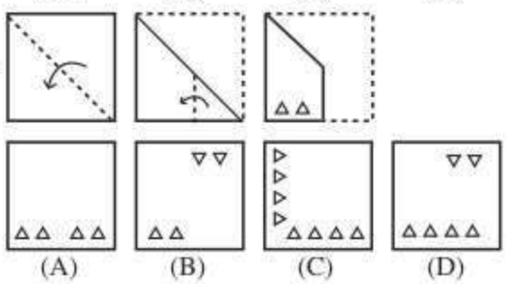

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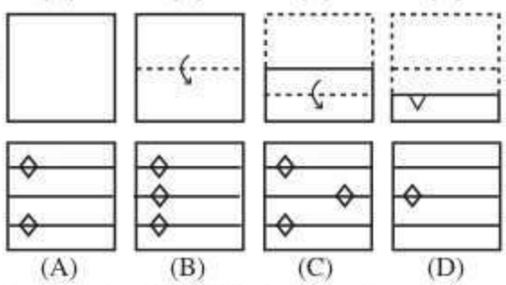

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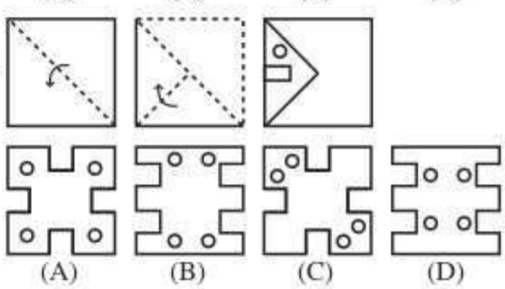

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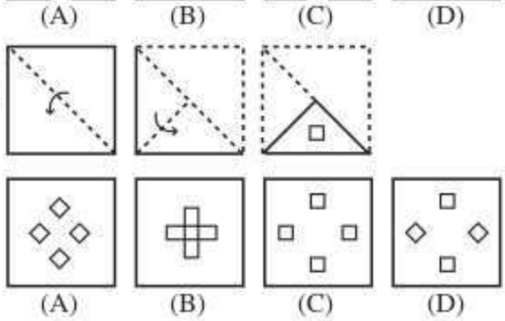

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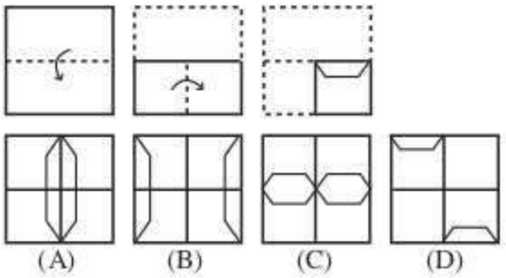

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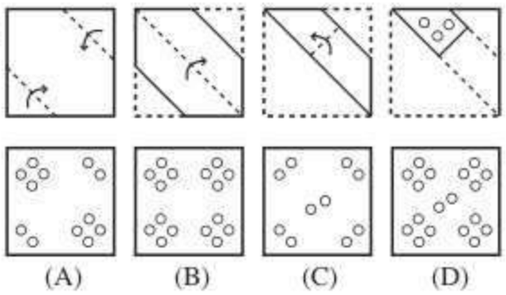

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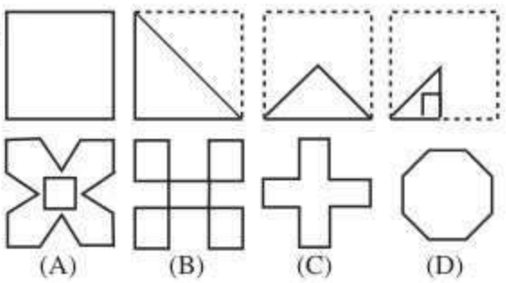

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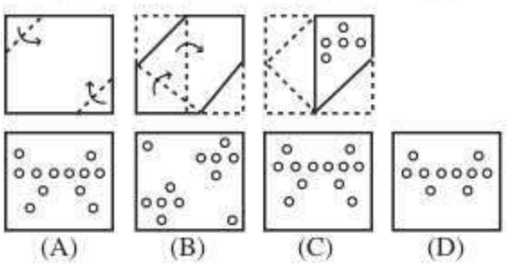

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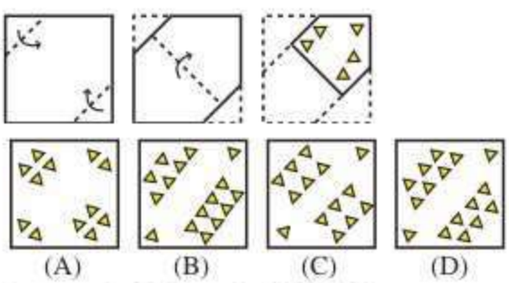

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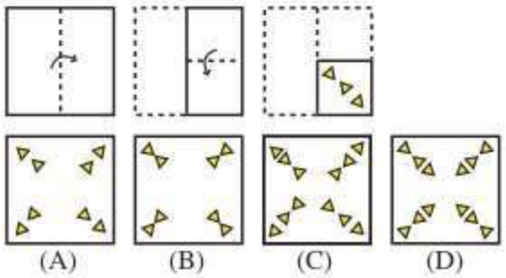

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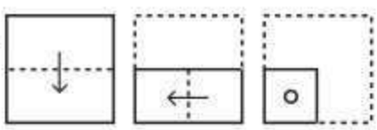
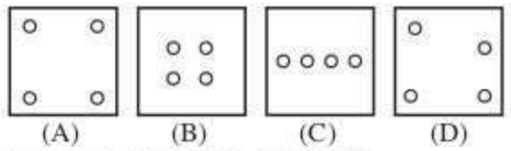
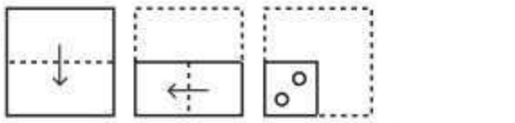



(A) (B) (C) (D)

25.

(A) (B) (C) (D)

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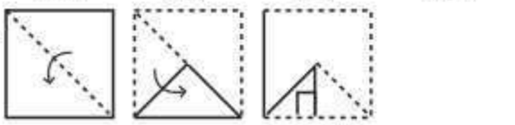
(A) (B) (C) (D)

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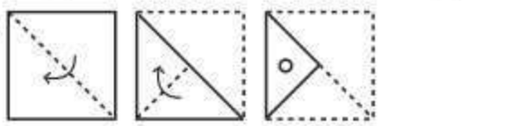
(A) (B) (C) (D)

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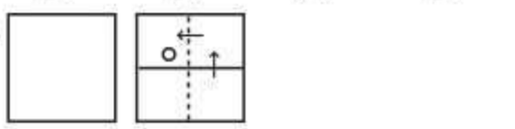

(A) (B) (C) (D)

29.

(A) (B) (C) (D)

30.

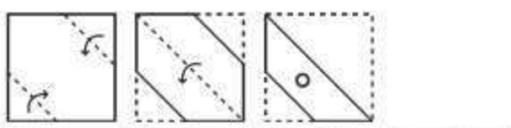
(A) (B) (C) (D)

31.

(A) (B) (C) (D)

32.

(A) (B) (C) (D)

33

(A) (B) (C) (D)

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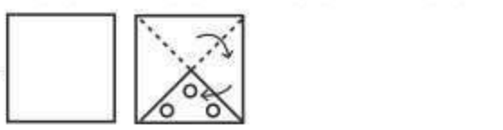
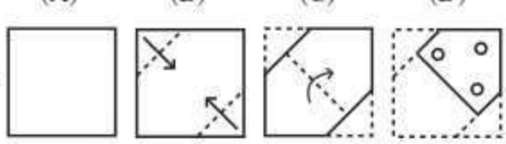

(A) (B) (C) (D)

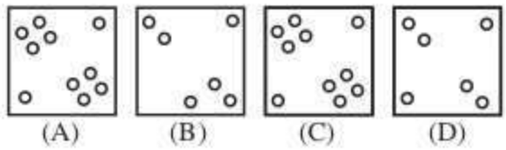
35.

(A) (B) (C) (D)

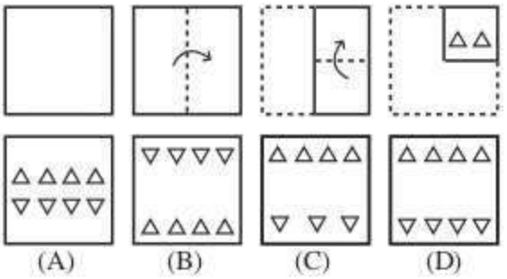
36.

(A) (B) (C) (D)

37.




38.



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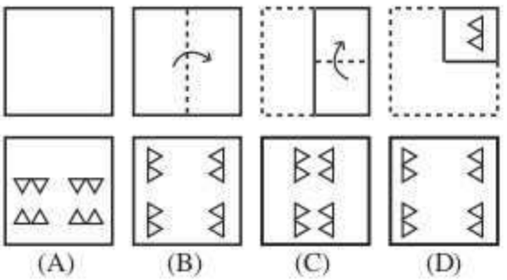

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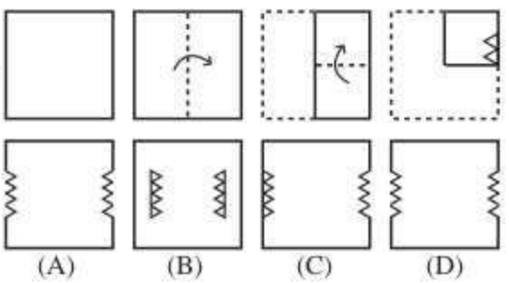

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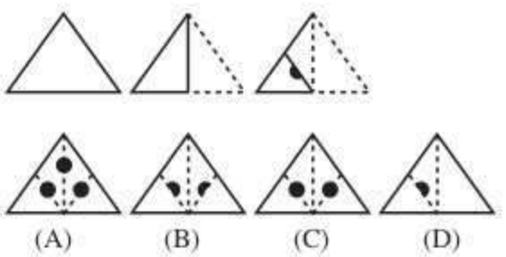

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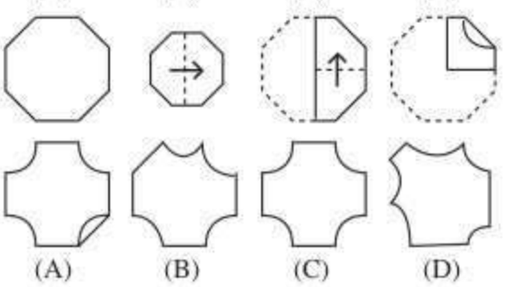

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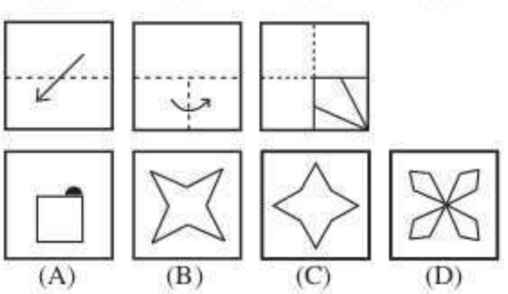
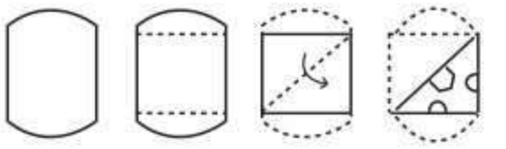
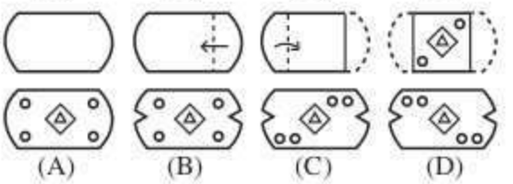


44.



45.



Answers

1. (D)	2. (A)	3. (A)	4. (B)	5. (D)
6. (C)	7. (A)	8. (A)	9. (D)	10. (A)
11. (C)	12. (B)	13. (D)	14. (C)	15. (A)
16. (C)	17. (C)	18. (C)	19. (B)	20. (B)
21. (A)	22. (B)	23. (C)	24. (A)	25. (D)
26. (D)	27. (D)	28. (C)	29. (D)	30. (C)
31. (A)	32. (D)	33. (C)	34. (A)	35. (D)
36. (C)	37. (A)	38. (A)	39. (B)	40. (D)
41. (B)	42. (C)	43. (B)	44. (B)	45. (C)

Continued from Page 218

Exercise 2

1.	(A)	(B)	●	(D)	(E)
2.	(A)	(B)	(C)	(D)	●
3.	(A)	(B)	●	(D)	(E)
4.	(A)	(B)	(C)	●	(E)
5.	●	(B)	(C)	(D)	(E)
6.	(A)	(B)	(C)	●	(E)
7.	(A)	●	(C)	(D)	(E)
8.	(A)	(B)	(C)	●	(E)
9.	(A)	(B)	(C)	●	(E)
10.	(A)	●	(C)	(D)	(E)
11.	●	(B)	(C)	(D)	(E)
12.	●	(B)	(C)	(D)	(E)
13.	(A)	(B)	(C)	(D)	●
14.	(A)	●	(C)	(D)	(E)
15.	(A)	(B)	(C)	(D)	●
16.	(A)	(B)	(C)	(D)	●
17.	(A)	(B)	(C)	(D)	●
18.	(A)	(B)	●	(D)	(E)
19.	●	(B)	(C)	(D)	(E)
20.	(A)	(B)	(C)	●	(E)
21.	(A)	(B)	(C)	(D)	●
22.	(A)	(B)	●	(D)	(E)
23.	●	(B)	(C)	(D)	(E)
24.	(A)	●	(C)	(D)	(E)
25.	(A)	(B)	●	(D)	(E)

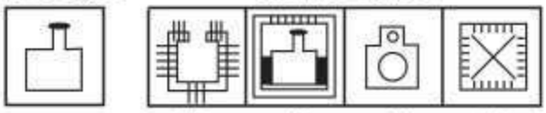
Spotting Out the Embedded or Hidden Figure

In this test a figure is given as an original figure followed by four answer figures. One of the answer figures, in embedded or hidden in the original figure. Candidates are expected to select the alternative that carries the correct figure which clearly shows the embedded portion in the original figure.

This test is to assess how quickly can a candidate recognize that is hidden among them.

Example 1.

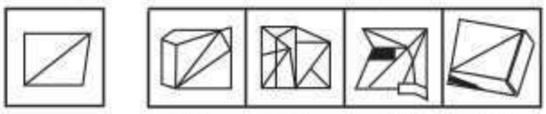
Model Figure **Answer Figures**



Answer with Explanation : (B) On a close observation, we find that in answer fig. (B), the model is embedded. Hence answer is (B).

Example 2.

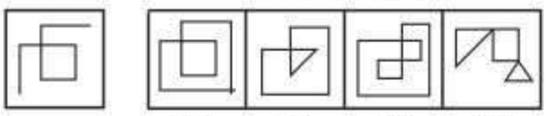
Model Figure **Answer Figures**



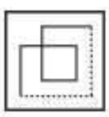
Answer with Explanation : (D) In the model two triangles are joint together. Such figure is hidden in answer figure (D). Hence the answer is (D).

Example 3.

Model Figure **Answer Figures**



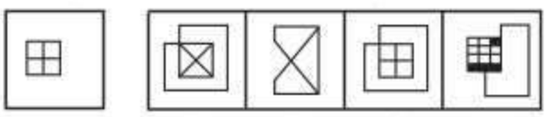
Answer with Explanation : (A) The answer figure (A) is as shown below :



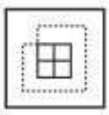
Hence answer is (A).

Example 4.

Model Figure **Answer Figures**



Answer with Explanation : (C) The answer figure (C) is as shown below :

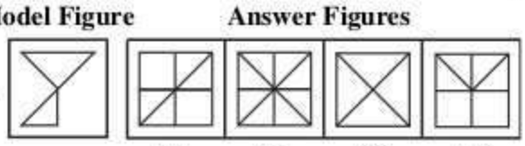


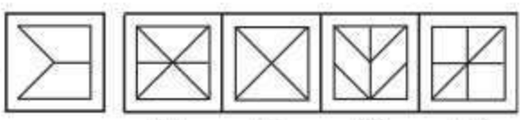
Hence answer is (C).

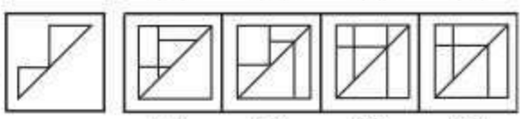
Exercise

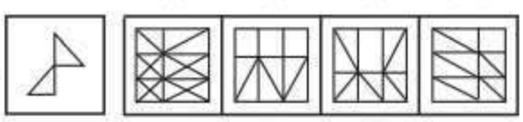
Directions—(Q. 1–40) In each of the following questions. One model figure is followed by four answer figures (A), (B), (C) and (D). In one of the answer figures the model figure is concealed. Find that answer figure.

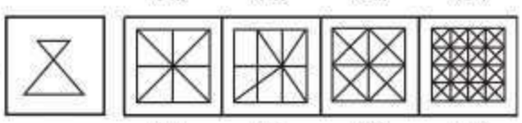
Model Figure **Answer Figures**

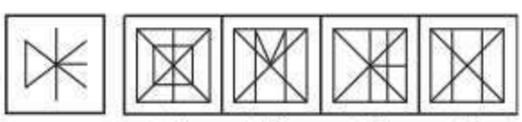
1. 

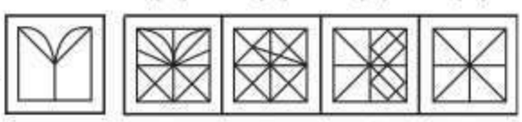
2. 

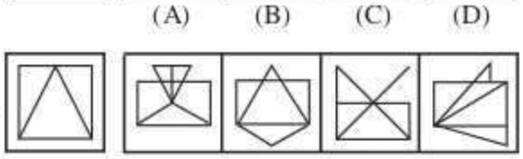
3. 

4. 

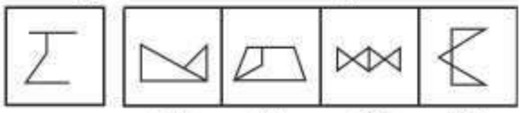
5. 

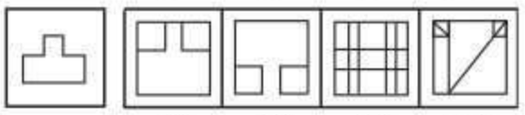
6. 

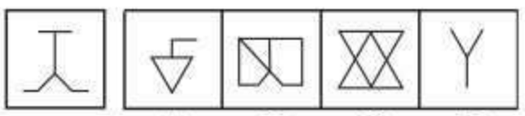
7. 

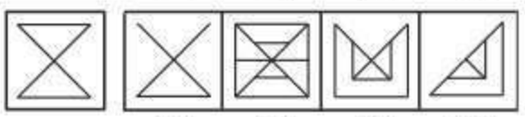
8. 

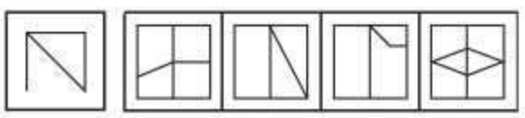
Model Figure **Answer Figures**

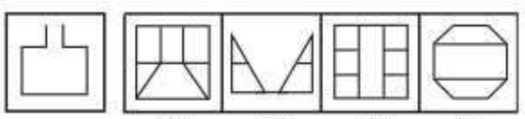
9. 
(A) (B) (C) (D)

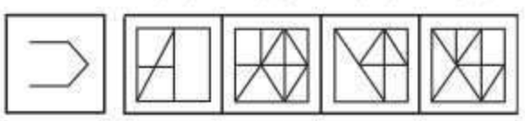
10. 
(A) (B) (C) (D)

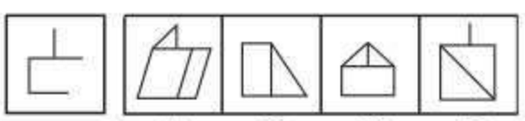
11. 
(A) (B) (C) (D)

12. 
(A) (B) (C) (D)

13. 
(A) (B) (C) (D)

14. 
(A) (B) (C) (D)

15. 
(A) (B) (C) (D)

16. 
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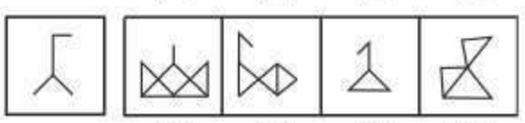
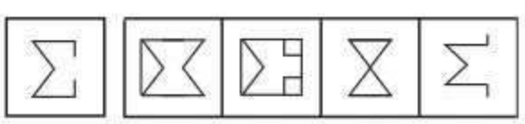
17. 
(A) (B) (C) (D)

18. 
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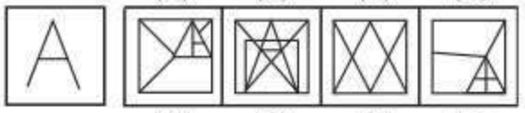
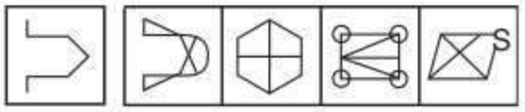
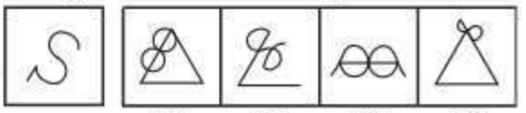
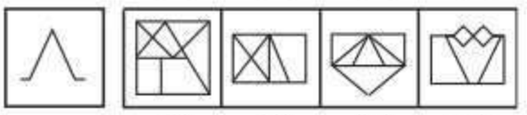
19. 
(A) (B) (C) (D)

20. 
(A) (B) (C) (D)

Model Figure **Answer Figures**

21. 
(A) (B) (C) (D)

22. 
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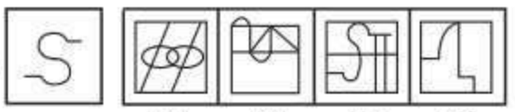
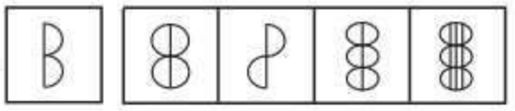
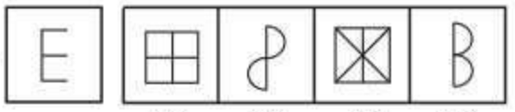
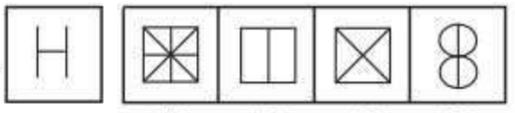
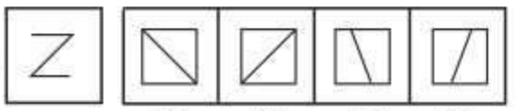
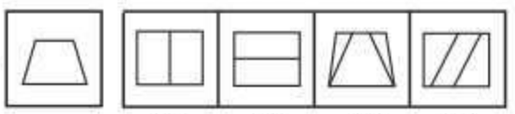
23. 
(A) (B) (C) (D)

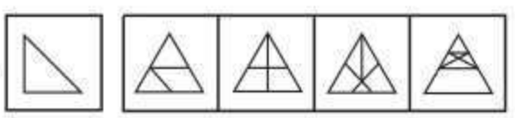
24. 
(A) (B) (C) (D)

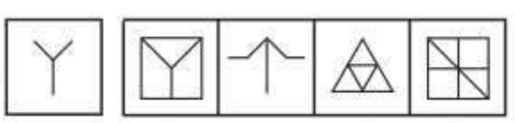
25. 
(A) (B) (C) (D)

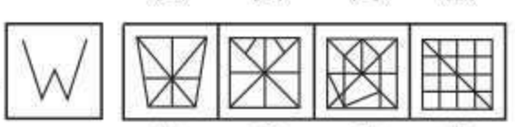
26. 
(A) (B) (C) (D)

27. 
(A) (B) (C) (D)

28. 
(A) (B) (C) (D)

29. 
(A) (B) (C) (D)

30. 
(A) (B) (C) (D)

31. 
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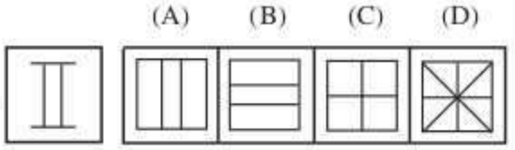
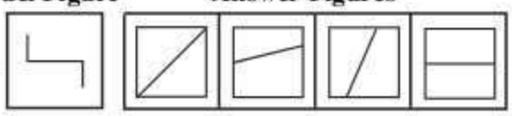
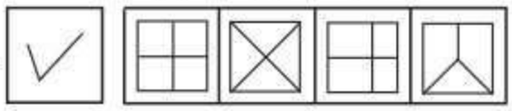
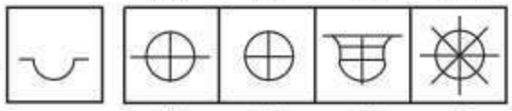
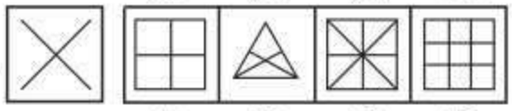
32. 
(A) (B) (C) (D)

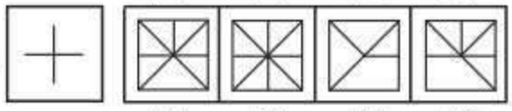
Model Figure **Answer Figures**

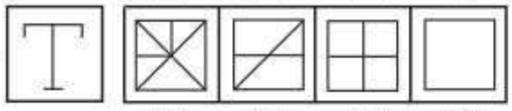
33. 
(A) (B) (C) (D)

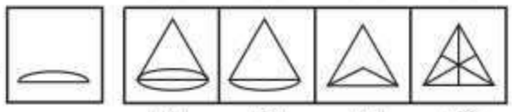
34. 
(A) (B) (C) (D)

35. 
(A) (B) (C) (D)

36. 
(A) (B) (C) (D)

37. 
(A) (B) (C) (D)

38. 
(A) (B) (C) (D)

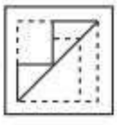
39. 
(A) (B) (C) (D)

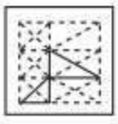
40.
(A) (B) (C) (D)

Answers with Explanations

1. (B)

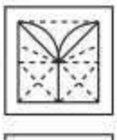
2. (A)

3. (B) 

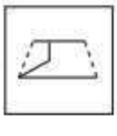
4. (A) 

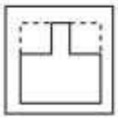
5. (D)

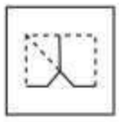
6. (C)

7. (A) 

8. (C)

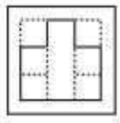
9. (B) 

10. (A) 

11. (B) 

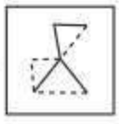
12. (B)

13. (B)

14. (C) 

15. (B)

16. (A)

17. (D) 

18. (B)

19. (B)

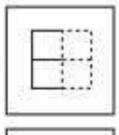
20. (A)

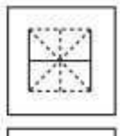
21. (A)

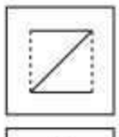
22. (C)

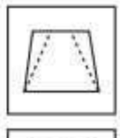
23. (C)

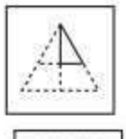
24. (A)

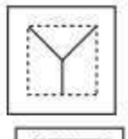
25. (A) 

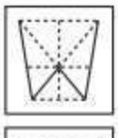
26. (A) 

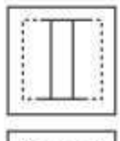
27. (B) 

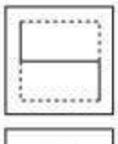
28. (C) 

29. (B) 

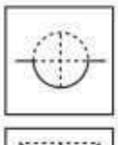
30. (A) 

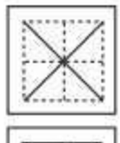
31. (A) 

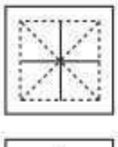
32. (A) 

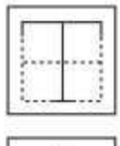
33. (D) 

34. (B)

35. (A) 

36. (C) 

37. (B) 

38. (C) 

39. (A)

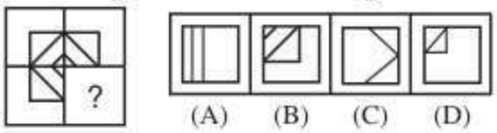
40. (A)

Completion the Incomplete Pattern

In these types of questions, a segement in a figure generally a quarter, is left blank. This incomplete figure is followed by few choices, generally four or five, showing the missing segement, which is fitted in the incomplete figure, to complete the figure. Candidates are expected to be vigilant and careful while detecting the correct option as sometimes the alternatives have very least differences among them.

Example 1.

Problem Figure **Answer Figures**

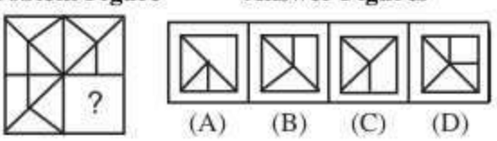


Answer with Explanation : (B) Among the answer figures, only figure (B) is such, if it is placed in place of question mark (?), it will complete the pattern.

The complete pattern will be as shown below :

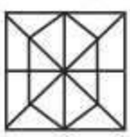
Example 2.

Problem Figure **Answer Figures**



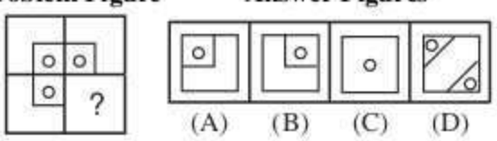
Answer with Explanation : (B) If from the answer figures if (B) is placed in place of question mark (?), it will complete the pattern.

The complete pattern will be as :



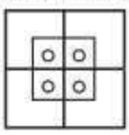
Example 3.

Problem Figure **Answer Figures**



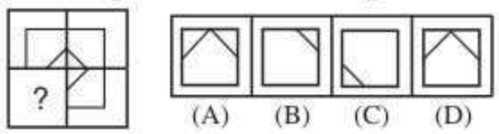
Answer with Explanation : (A) If answer figure (A) is placed in place of question mark (?) it will complete the pattern.

The complete pattern will be as :



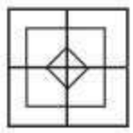
Example 4.

Problem Figure **Answer Figures**



Answer with Explanation : (B) If answer figure (B) is placed in place of question mark (?), the pattern will be completed.

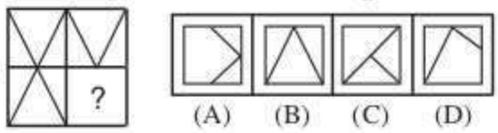
The complete pattern is as :

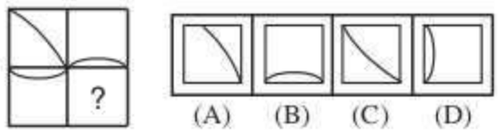


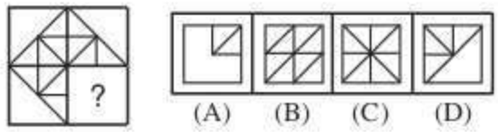
Exercise

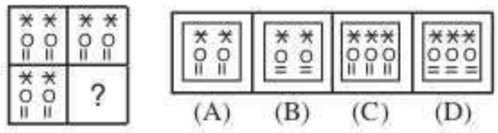
Directions— (Q. 1–40) In each of the following questions one problem figure is given. This is followed by four answer figures. In problem some blank is left which is shown by question mark. In answer figures there is only one figure which if placed in place of question mark, it will complete the pattern. Find the figure which completes the pattern.

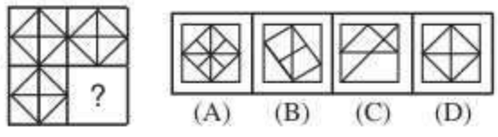
Problem Figure **Answer Figures**

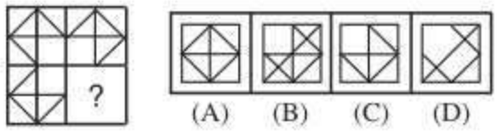
1. 

2. 

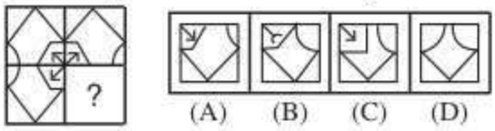
3. 

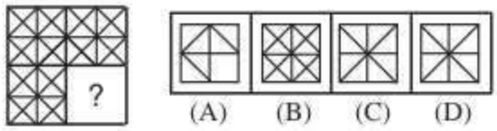
4. 

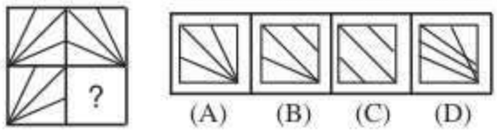
5. 

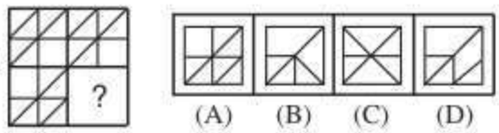
6. 

Problem Figure **Answer Figures**

7. 
(A) (B) (C) (D)

8. 
(A) (B) (C) (D)

9. 
(A) (B) (C) (D)

10. 
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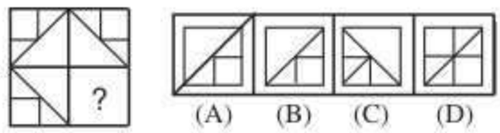
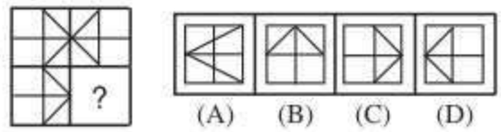
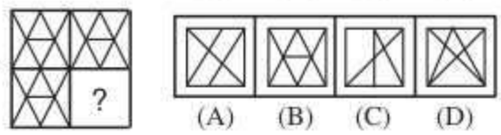
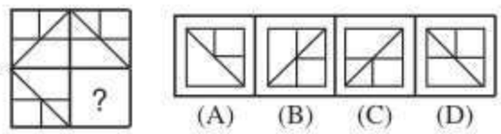
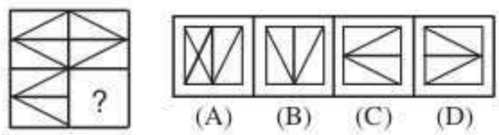
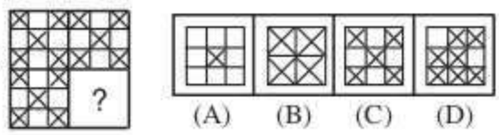
11. 
(A) (B) (C) (D)

12. 
(A) (B) (C) (D)

13. 
(A) (B) (C) (D)

14. 
(A) (B) (C) (D)

15. 
(A) (B) (C) (D)

16. 
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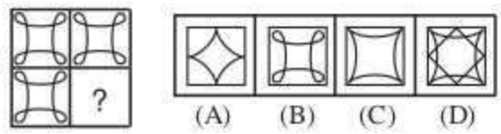
17. 
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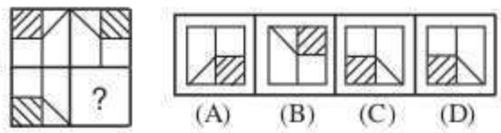
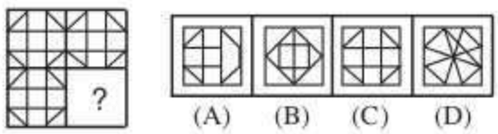
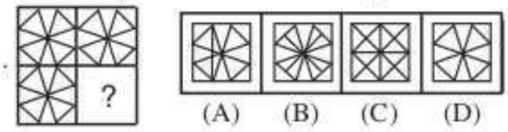
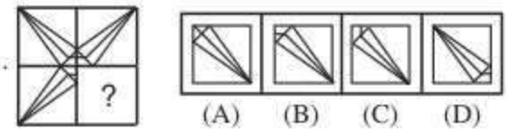
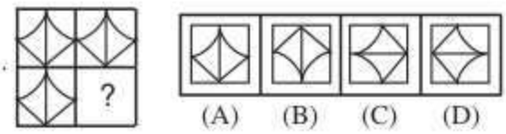
18. 
(A) (B) (C) (D)

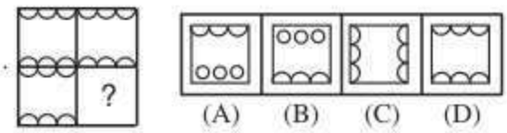
19. 
(A) (B) (C) (D)

Problem Figure **Answer Figures**

20. 
(A) (B) (C) (D)

21. 
(A) (B) (C) (D)

22. 
(A) (B) (C) (D)

23. 
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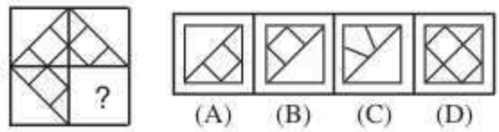
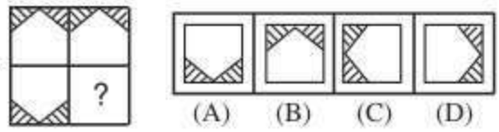
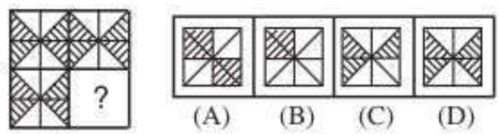
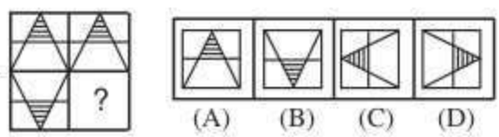
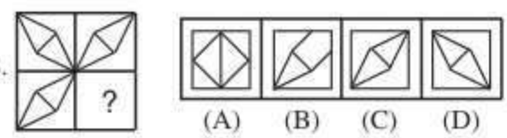
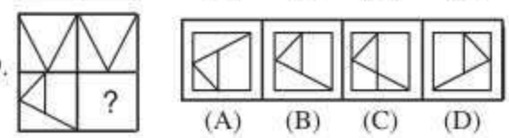
24. 
(A) (B) (C) (D)

25. 
(A) (B) (C) (D)

26. 
(A) (B) (C) (D)

27. 
(A) (B) (C) (D)

28. 
(A) (B) (C) (D)

29. 
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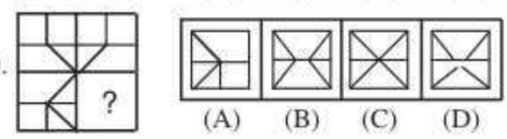
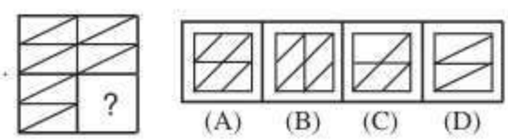
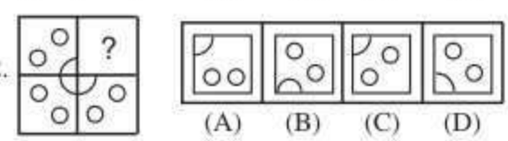
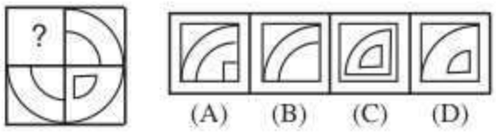
30. 
(A) (B) (C) (D)

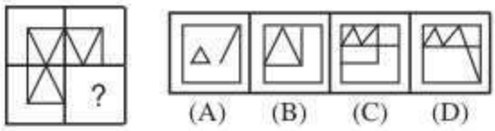
31. 
(A) (B) (C) (D)

32. 
(A) (B) (C) (D)

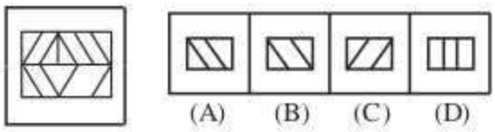
Problem Figure **Answer Figures**

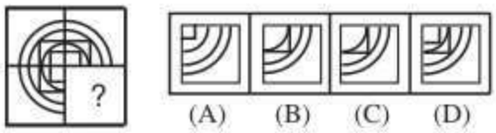
33. 

(A) (B) (C) (D)

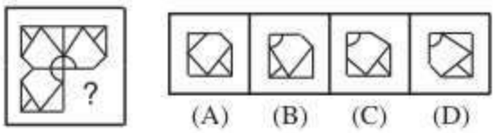
34. 

(A) (B) (C) (D)

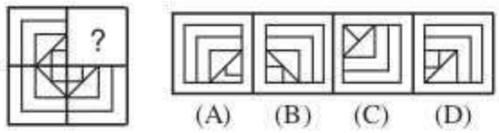
35. 
(A) (B) (C) (D)

36. 

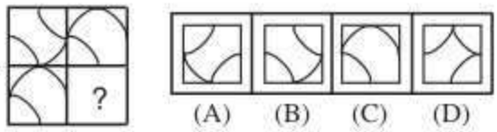
(A) (B) (C) (D)

37. 

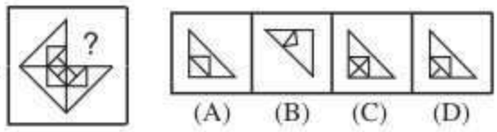
(A) (B) (C) (D)

38. 

(A) (B) (C) (D)

39. 

(A) (B) (C) (D)

40. 

(A) (B) (C) (D)

Answers

1. (B)	2. (C)	3. (D)	4. (A)	5. (D)
6. (C)	7. (A)	8. (B)	9. (A)	10. (A)
11. (B)	12. (D)	13. (B)	14. (C)	15. (D)
16. (C)	17. (B)	18. (A)	19. (C)	20. (D)
21. (B)	22. (A)	23. (D)	24. (B)	25. (A)
26. (D)	27. (B)	28. (D)	29. (D)	30. (A)
31. (D)	32. (D)	33. (D)	34. (B)	35. (B)
36. (D)	37. (B)	38. (B)	39. (B)	40. (D)

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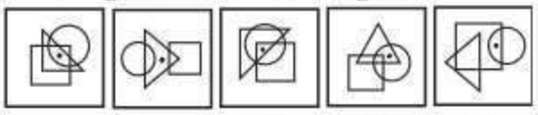
Dot Position

In these questions, one or more black dots is/are placed somewhere in the area common to various figures such as square, triangle, rectangle and circle. The candidate is required to find out the answer figure in which the common relationship can be shown.

Example.

Question Figure **Answer Figures**



(A) (B) (C) (D)

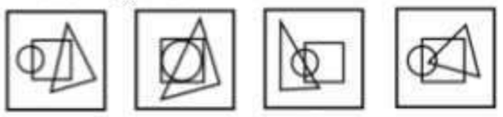
Answer with Explanation : (B) The black dot in the question figure is present commonly in triangle, square and circle. Hence, the answer figure must be the same in which the black dot should be common in the triangle, the square and the circle, only (B) represents such a figure. Hence, 'B' is the answer.

Exercise

Directions—(Q. 1 to 6) In the following given each question, a question figure is given which has one or more dots. This question figure is followed by four answer figures. As the position of dot is placed in the question figure in the same way one figure of the answer figures displays the same relation. Find out the correct alternative.

1. **Question Figure**

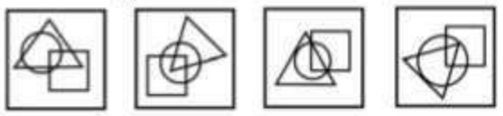
Answer Figures



(A) (B) (C) (D)

2. **Question Figure**

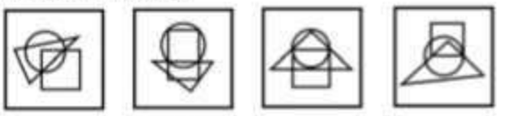
Answer Figures



(A) (B) (C) (D)

3. **Question Figure**

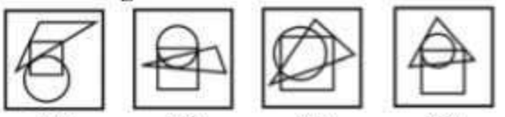
Answer Figures



(A) (B) (C) (D)

4. **Question Figure**

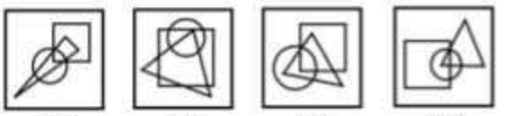
Answer Figures



(A) (B) (C) (D)

5. **Question Figure**

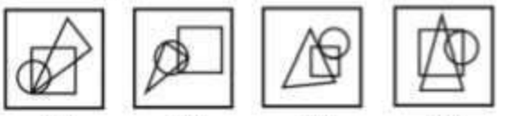
Answer Figures



(A) (B) (C) (D)

6. **Question Figure**

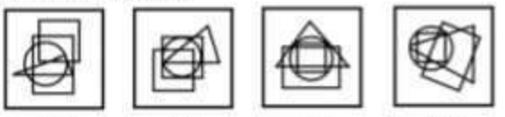
Answer Figures



(A) (B) (C) (D)

7. **Question Figure**

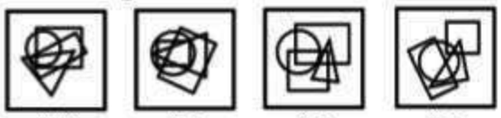
Answer Figures



(A) (B) (C) (D)

8. **Question Figure**

Answer Figures



(A) (B) (C) (D)

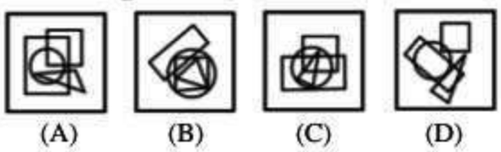
9. **Question Figure**

Answer Figures

(A) (B) (C) (D)

10. **Question Figure**

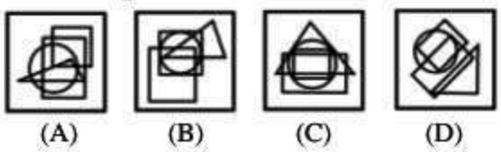
Answer Figures



(A) (B) (C) (D)

11. **Question Figure**

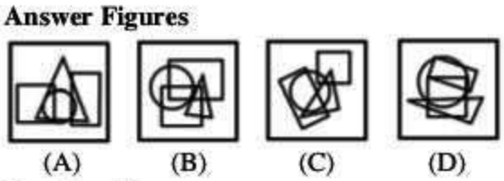
Answer Figures



(A) (B) (C) (D)

12. **Question Figure**

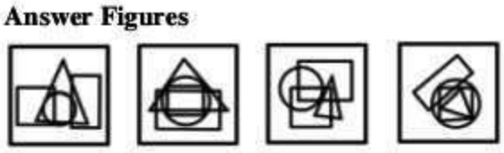
Answer Figures



(A) (B) (C) (D)

13. **Question Figure**

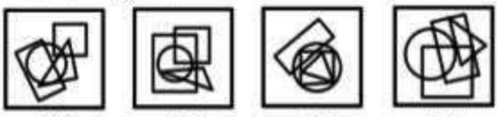
Answer Figures



(A) (B) (C) (D)

14. **Question Figure**

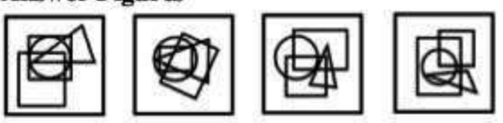
Answer Figures



(A) (B) (C) (D)

15. **Question Figure**

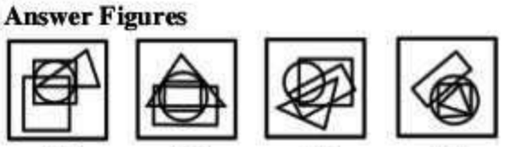
Answer Figures



(A) (B) (C) (D)

16. **Question Figure**

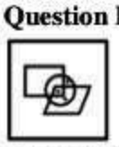
Answer Figures



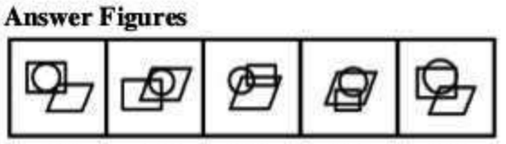
(A) (B) (C) (D)

Directions—(Q. 17 to 21) In each of the questions, a set is given in which various figures intersect one another and three black dots are placed in these figures. A group of five alternative figures are given for the answer of this question figure. Find out the alternate figure by studying the black dots in the figure mentioned on the left side. In this figure three black dots are placed in the same manner as placed in the question figure.

17. **Question Figure**



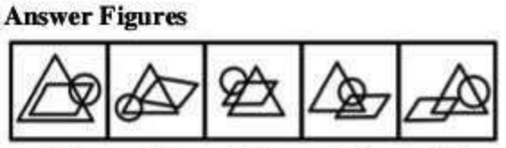
Answer Figures



(A) (B) (C) (D) (E)

18. **Question Figure**

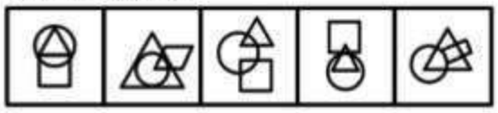
Answer Figures



(A) (B) (C) (D) (E)

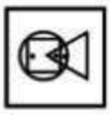
19. **Question Figure**

Answer Figures



(A) (B) (C) (D) (E)

20. **Question Figure**

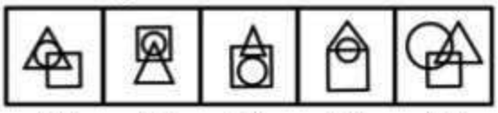


Answer Figures

(A) (B) (C) (D) (E)

21. **Question Figure**

Answer Figures

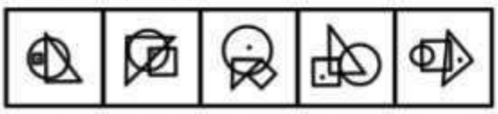


(A) (B) (C) (D) (E)

Directions—(Q. 22 to 30) In each of the questions, a question figure is given followed by five answer figures. In each of the question figures one or more dots are shown. Find out the particular figure in which dot/dots is/are placed in the same manner as in the question figure.

22. **Question Figure**

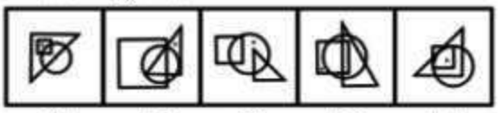
Answer Figures



(A) (B) (C) (D) (E)

23. **Question Figure**

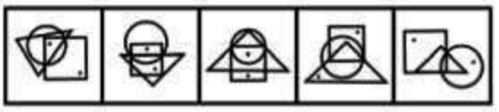
Answer Figures



(A) (B) (C) (D) (E)

24. **Question Figure**

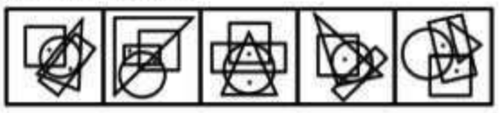
Answer Figures



(A) (B) (C) (D) (E)

25. **Question Figure**

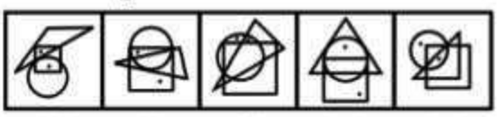
Answer Figures



(A) (B) (C) (D) (E)

26. **Question Figure**

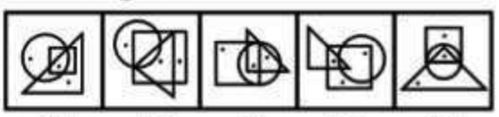
Answer Figures



(A) (B) (C) (D) (E)

27. **Question Figure**

Answer Figures



(A) (B) (C) (D) (E)

28. **Question Figure**

Answer Figures

(A) (B) (C) (D) (E)

29. **Question Figure**

Answer Figures

(A) (B) (C) (D) (E)

30. **Question Figure**

Answer Figures

(A) (B) (C) (D) (E)

Answers with Explanations

1. (C) The dot of the given figure shows clearly that some part of the triangle is in the circle and that part is not present in the square. Only alternative (C) represents such a figure.
2. (A) In the given figure, dots explain that some part of the triangle and the square is not common to the circle and some part of the circle and the triangle is not common to square. Hence, option (A) is our answer.
3. (B) The dots of the given diagram show that some part of square and circle are not common with the triangle and some part of the triangle and square is also not common with the circle. This possibility occurs only in (B).
4. (C) The dots of the given diagram clearly state that some part of the triangle and the circle are not common with the circle and some part of the circle are not common to both the triangle and the square. This possibility occurs only in (C).
5. (D) The dots of the given diagram clearly indicate that the some part of the circle and the square is uncommon to the triangle and some part of the triangle and the circle are uncommon to square while some part of the circle, the square and the triangle are common to each other. Such possibility occurs only in the alternative (D).
6. (B) The dots of the given figures clearly indicate that some part of the circle and the triangle are uncommon to the square, some part of the circle and the square are uncommon to the triangle and some part of the circle, the triangle and the square are common to each other. This possibility occurs only in (B).
7. (D) In the left figure, a dot is placed in the centre of the square and the circle but the second dot is placed in all the four figures and the third dot is placed between the circle and the rectangle. Such possibility occurs only in (D).
8. (B) In the left figure, there is a dot placed between the triangle and the circle, the second dot is placed among the triangle, the square and the circle and the third dot is placed among the circle, the square and the rectangle. Such possibility occurs only in (B).
9. (A) In the left figure, a dot is placed between the circle and the square, the second dot is placed between the triangle, the square and the rectangle and the third dot is placed between the circle and the rectangle. Such possibility occurs only in (A).
10. (D) In the left figure, a dot is placed between the circle and the square, the second dot is placed between the triangle and the rectangle and the third dot is placed between the rectangle and the square. Such possibility is present only in (D).
11. (A) In the left figure, one dot occupies the area which is common to the rectangle and the circle and the second dot occupies the area which is common to the circle, the rectangle and the square and the third dot occupies the area which is common to the rectangle and the triangle. Here, option (A) is our answer.
12. (D) In the left figure, one dot occupies the area which is common to the rectangle the circle and the square. The second dot occupies the area which is common to the rectangle and the circle, the third dot occupies the area which is common to the triangle, the square and the circle. Here option (D) is our answer.
13. (A) In the left figure, one dot occupies the area which is common to the triangle and the square while other dot occupies the area which is common to the triangle and the circle. Hence, option (A) is our answer.
14. (D) In the left figure, one dot occupies the area which is common to the circle and the square, the second dot occupies the area which is common to the triangle and the rectangle and the third dot occupies the area which is common to the triangle, the rectangle and the square. Here, option (D) is our answer.
15. (B) In the left figure, one dot occupies the area which is common to the rectangle, the square and the circle, the second dot occupies the area which is common to the triangle, the rectangle and the circle and the third dot occupies the area which is common to the triangle, the circle and the square. Hence, option (B) is our answer.
16. (C) In the left figure, one dot occupies the area which is common to the rectangle, the square and the circle, the second dot occupies the area which is common to the rectangle and the circle and the third occupies the area which is common to the triangle, the square and the rectangle. Hence, option (C) is our answer.
17. (C) In the left figure one dot occupies the area which is only in the circle, the second dot occupies the area which is common to the circle and quadilateral and the third dot occupies the area which is common to the quadilateral, the circle and the rectangle. Such possibility occurs only in (C).
18. (D) In the left figure, one dot occupies the area which is only in the triangle, the second dot occupies the area which is only in the quadilateral and the third dot occupies the area which is common to all the three figures. Option (D) is our answer.

19. (A) In the left figure, the triangle occupies in the circle and both the dots are on the two tops of the triangle. Here, (B) is our answer.

20. (A) In the left figure, one dot occupies the area which is common to the circle and the square, the second dot occupies the area which is common to the circle and the triangle and the third dot occupies the area which is common to all the three figures. Option (A) is our answer.

21. (E) In the left figure, the first dot occupies the area which is only in the circle, the second dot occupies the area which is common to the triangle and the square, the third dot occupies the area which is common to all the three figures. Hence, option (E) is our answer.

22. (A) In the left figure the dot occupies the area which is common to all the three figures. Option (B) is our answer.

23. (A) In the left figure, the dot occupies the area which is common to the triangle and the circle. Option (A) is our answer.

24. (B) In the left figure, a dot occupies the area which is common to the triangle and the square and the second dot occupies the area which is common to the square and the circle. Hence, option (B) is our answer.

25. (D) In the left figure, a dot occupies the area which is common to the circle and the rectangle and second dot which is common to the triangle, the square and the circle. Hence, option (D) is our answer.

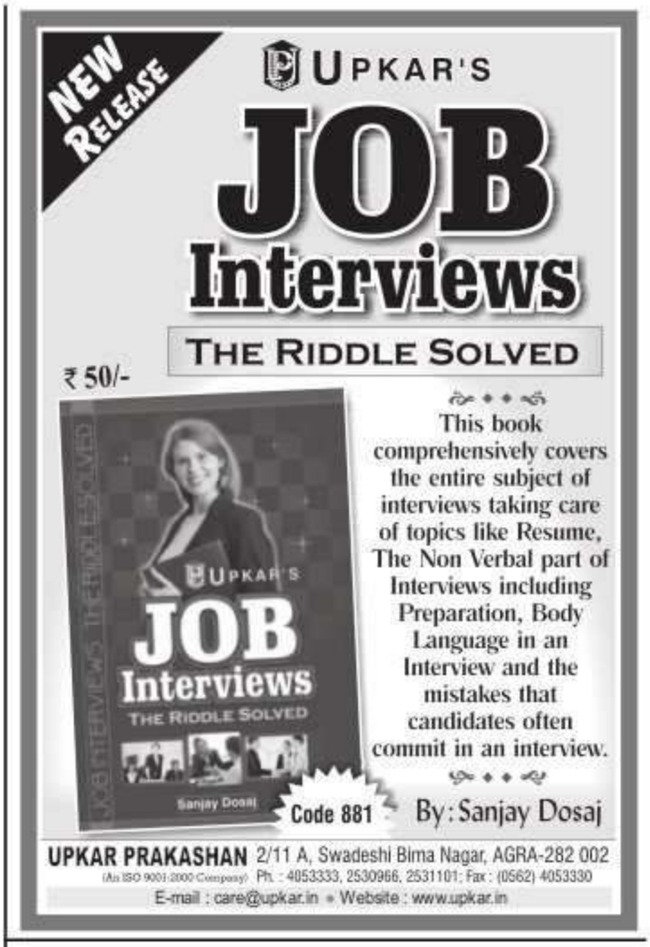
26. (C) In the left figure, one dot occupies the area which is common to the triangle and the circle, and the second dot occupies the area which occupies only in the circle. Hence, option (C) is our answer.

27. (D) In the left figure, one dot occupies the area only in the square, the second dot occupies the area which is common to the square and the circle and the third dot occupies the area which is common to the triangle and the square. Hence, option (D) is our answer.

28. (B) In the left figure, one dot occupies the area which is common to the triangle and the circle, the second dot occupies the area which is common to the square and the circle and the third dot occupies the area which is common to all the three figures. Hence, option (B) is our answer.

29. (E) In the left figure, one dot occupies the area which is common to the square and the circle, the second dot occupies the area which is common to the square and the rectangle and the third dot occupies the area which is common to the rectangle. Hence, option (E) is our answer.

30. (C) In the left figure, one dot occupies the area which is common to the triangle, the square and the circle and the second dot occupies the area which is common to the triangle and the circle and the third dot occupies the area which is common to the triangle the circle and the rectangle. Hence, option (C) is our answer.



Syllogism

The word 'Syllogism' is originally a word given by the Greeks. The term 'Syllogism' is used to denote that form of reasoning where conclusion is drawn from two or more statements. Actually it is an inference or deduction of the given statements. This is 'undoubtedly' the most important part of logical reasoning. Syllogism is an indispensable feature of all competitive examinations and tests which determines the candidate's basic intelligence and aptitude. The questions on logic are to be solved as per the information given without any concern of the formal validity or truth of the statements *i.e.*, conclusion should follow directly from the statement given.

In solving the questions of syllogism, some are of the opinion that Venn-diagram can be a great use and, no doubt, a few questions can be solved with the help of Venn-diagrams, but Venn-diagram alone does not help the students to solve the various questions on syllogism.

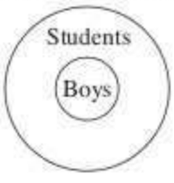
The problem of syllogism can be solved by using a little intelligence and common sense but we need to have, therefore, a definite and well-defined method to tackle the problem.

Proposition—Any statement is termed as the proposition. The proposition is a sentence that makes a statement and gives a relation between two terms. It comprises a subject, a predicate and a copula. Subject is that which affirms or denies a fact. The predicate is the part of the proposition denoting that which is affirmed or denied about the subject and copula is the part of the proposition which establishes the relation between the subject and the predicate.

Propositions can be classified into four types—

(1) **Universal Affirmative Proposition**—This type of proposition distributes only the subject. The predicate is not interchangeable with the subject while maintaining the validity of the proposition A universal affirmative proposition is usually denoted by the letter 'A'.

Example—All boys are students.

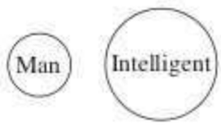


From here, we conclude that in A type proposition, only subject is distributed and we cannot say " All students are boys".

(2) **Universal Negative Proposition**—This type of proposition distributes both the subject and the predicate. It means an entire class of predicate term is denied to the entire class of the subject term.

A universal negative proposition is usually denoted by the letter 'E'.

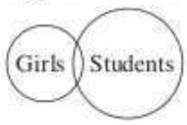
Example—No man is intelligent.



We can conclude than Man and Intelligent have nothing in common and hence both subject and predicate are distributed.

(3) **Particular Affirmative Proposition**—This type of proposition distributes neither the subject nor the predicate. Particular affirmative proposition is denoted by the letter 'I'.

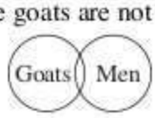
Example—Some girls are students.



In this type of proposition, subject and predicate have something in common. Particular proposition either only partly include or only partly exclude the subject while making a statement.

(4) **Particular Negative Proposition**—This type of proposition distributes only in the predicate. It is denoted by the letter 'O'.

Example—Some goats are not men.



Here, the subject term 'some goats' is only for a part of its class and hence it is undistributed while the predicate term 'men' is denied in entirely to the subject term and hence is distributed. Syllogism is concerned with three terms.

(1) **Major Term**—It is the predicate of the conclusion and it is denoted by 'P'.

(2) **Minor Term**—It is the subject of the conclusion and it is denoted by 'S'.

(3) **Middle Term**—It is the term common to both the statements and it is denoted by 'M'.

The Venn diagram.

There is a pictorial way of representing the proposition. Suppose that the proposition is trying to relate the subject (S) with predicate (P). There are four ways in which the relation could be according to the four propositions.

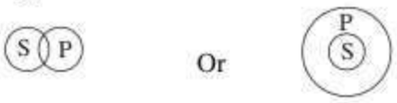
Type–A

All S are P

Type–E

No S is P

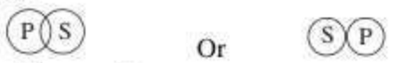
Type–I



Some S are P

Type–O

Or



Some S are not P

Syllogism is actually a problem of mediate inference but before we proceed to the rules for arriving at valid inferences, it is necessary to have a clear understanding of difference between Immediate and Mediate inference.

Immediate inference : In immediate inference, conclusion is drawn from only one given proposition for example, let a given statement be "All men are wise. Then based on this statement a conclusion could be drawn "that" some men are wise".

In case of two statements, connected by a common term which is popularly known as Middle Term.

Statements— I. Some girls are teacher.

II. No teacher is intelligent.

In the above pair of statements, the term teacher is common both the statements and joins the two statements. Now, if a conclusion is drawn from any one of the two statements without taking consideration the other statement is known as Immediate inference.

Conclusions—Some Teacher are girls (From Statement I)

No intelligent is teacher (From Statement II)

Rules for immediate inference—There are many aspects or methods of immediate inference and can be drawn with the help of some rules. These rules are divided into four heads.

(A) Conversion (B) Obversion

(C) Contraposition (D) Sub-alteration

(A) **Conversion**—In conversion, the subject and the predicate of a given statement are interchanged *i.e.*, the subject becomes the predicate and the predicate becomes the subject but the quality of the proposition remains intact *i.e.*, the affirmative statement remains affirmative and the negative remains negative.

Thus, we can say that A-type proposition can be changed into I-type. E-type can be converted into E-type. I-type can be converted into I-type but O-type proposition can not be converted.

Examples—(i) **Statement**—All dogs are cats. (A-Type)

Conclusion—Some cats are dogs. (E-type)

(ii) **Statement**—No girl is beautiful. (E-type)

Conclusion—No beautiful is girl. (E-type)

(iii) **Statement**—Some bats are crows. (E-type)

Conclusion—Some crows are bats. (E-type)

(B) **Obversion**—In obversion, the conclusion is drawn from interchanging the quality of proposition *i.e.*, affirmative to negative and negative to affirmative but its original meaning remains the same. The subject of the given statement remains the subject of the conclusion.

Example—(i) **Statement**—No cow is pet. (E-type)

Conclusion—All cow are non-pet (A-type)

(C) **Contraposition**—In contraposition, there will be double conversion. First to obverse and then to converse.

Example—(i) **Statement**—No women are wise. (E-type)

Conclusion—All women are non-wise. (A-type, obversion)

Conclusion—Some non-wise are women. (I-type, conversion)

(D) **Sub-alteration**—A proposition can be changed into sub-alternation by retaining the same subject, same predicate and same quality but with changed quantity of proposition. Thus, we can say that A-type will be changed into I-type and E-type will be changed to O-type.

Examples—(i) **Statement**—All goats are elephants. (A-type)

Conclusion—Some goats are elephants. (I-type)

(ii) **Statement**—No ball is black. (E-type)

Conclusion—Some ball are non-black. (O-type)

We display in the below-mentioned table all the possible valid immediate inference drawn from each type of proposition *i.e.*, A. E. I. O. A study of the table given below can help the students to remember all the valid immediate inferences easily without going into details of above rules.

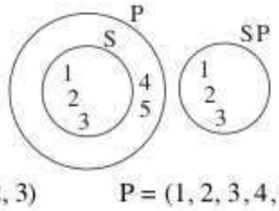
Type	Proposition	Immediate Inference
A	All S are P	Some P are S Some S are P No P is A
E	No S is P	Some S are not P Some P are not A
I	Some S are P	Some P are S
O	Some S are not P	No inference

The inference can also be drawn from logic using Venn-diagram. But the important point is to be noted while drawing such inferences from the Venn diagrams that all possibilities of Venn-diagrams should be drawn.

(1) Universal Affirmative (A-type)

All S are P

In A type of proposition, all S are contained in B. The circle representating S will be either inside or equal to circle representating B. Thus, in both the cases conclusions (some P are S) and (some S are P) are true. We can understand by taking two sets in all possible ways.



(i) S = (1, 2, 3) P = (1, 2, 3, 4, 5)

(ii) S = (1, 2, 3) P = (1, 2, 3)

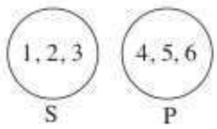
The above two cases show all the possibilities of two different sets S and P which show the relationship between each other as represented by the proposition— All S are P.

In both the cases we observe that set (1, 2, 3) is the part of Set A and Set B. Now, we can say that inference (some S are P) is true from this relationship. In the same way set (1, 2, 3) is the part of set B and also of set A. Therefore, it is also clear that inference (some P are S) is also true.

(2) Universal Negative (E-type)

No S is P

In E-type of proposition, there is only one possibility of Venn-diagram. This relationship can be shown by two sets S = (1, 2, 3) and P = (4, 5, 6). With the help of these two sets we see that 1, 2, and 3 is the part of set S but not of set P. Similarly 4, 5, 6 is the part of set P but not set of S.



Therefore, on the basis of E-type of proposition we can draw following immediate inferences—

(i) No P is S

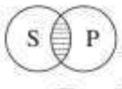
(ii) Some S are not P

(iii) Some P are not S

(3) Particular Affirmative (I-type)

Some S are P

In this proposition, some part of the circle denoting S as indicated by the shaded area of S (representing 'same S' lies within the circle denoting P). Slightly more attention-seeking is the representation for the 'O' proposition some S are not P. This proposition gives rise to many possible representations of Venn-diagrams and hence most of the inferences drawn therefrom are invalid and doubtful. The verbal interpretation of this figure would be there are some 'S' that are definitely not 'P' while there may some S that might be 'P' or might not be 'P'



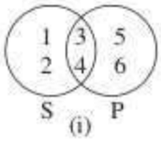
"Some 'S' are not 'P'' ["Some 'S' are 'P']

"Some 'S' are not 'P'' ["No 'S' are 'P']

(4) Particular Negative (O–Type)

Some S are Not P

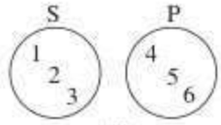
This proposition give no clue whether the remaining S are there in P or not and from this proposition no immediate inference can be drawn. We can deduce this proposition in the light of Venn-diagram representation. There may be three possibilities.



(i)

(i) S = 1, 2, 3, 4
B = 3, 4, 5, 6

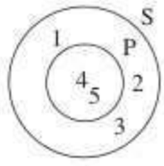
Set (1, 2) is the part of Set S but not Set B, hence this shows the relationship representated by the proposition Some 'S' are not 'P'.



(ii)

(ii) S = (1, 2, 3)
P = (4, 5, 6)

Set (2, 3) is the part of Set S but not set P, hence shows the relation representated by the proposition some S are not P.



(iii)

(iii) S = (1, 2, 3, 4)
P = (4, 5)

Set (1, 2, 3) is the part of set S but not set P, hence denotes proposition some 'S' are not 'P'.

We can say on behalf of all possible combinations showing relationship between S and P no valid inference can be drawn. Some S are P is true from case (i) and (iii) but not true from case (ii) hence it is an invalid inference. Similarly, some P are not S is true from case (i) and (ii) but not true from case (iii) and hence it is also an invalid inference.

The Hidden Proposition

There are some other sentences which are not on the standard patterns. Therefore, we have to find out the hidden proposition in such sentences.

1. Some A type propositions which do not begin with 'All'.

(A) All positive sentences which begin with 'every', 'each' 'any' are A-type propositions.

Examples —

(a) Every man loves his country.
(All men love their country)

(b) Each of them was present there.
(All were present there)

(c) Any one can do this work.
(All person can do this work)

(B) A positive sentence with a particular person as its subject is always an A-type proposition.

Examples —

(a) He should be awarded a handsome prize.
(He who should be awarded a handsome prize.)

(b) General Suharto is a controversial personality.

(C) A positive sentence with a very definite exception is also a A-type.

Examples—

(a) All girls except Reena have failed.

(b) All except Reena (are the students) who have failed.

2. Some E-type propositions not beginning with 'No'.

(A) All negative sentences beginning with 'none' 'no one' not a single' etc., are called E-type propositions.

Examples—

(a) None can escape from 'death'.
(No person is one who can escape from death).

(b) Not a single person was present.
(No person was present)

(B) A sentence with a particular person as its subject but a negative sense is an E-type proposition.

Examples—

(a) He does not deserve for a prize.
He (is not a man) who deserves for a prize.

(b) General Suharto is not a controversial personality.

(C) A negative sentence with a very definite exception is also of E-type.

Examples—

No man except David has failed.

(D) When an interrogative sentence is used to make an assertion, this could be reduced to an E-type proposition.

Examples—

(a) Is there any honesty left in this world ?
(No honesty is left in this world.)

(b) Is there any person who can deceive himself ?
(None can deceive himself).

3. Some I-type propositions which do not begin with 'some'.

(A) Positive propositions which begin with words such as 'most', 'a few', 'mostly', 'generally', 'almost', frequently' 'often' are to be reduced to the I-type proposition.

Examples—

(a) Men are usually masculine.
(Some men are masculine)

(b) Students are generally naughty.
(Some students are naughty)

(B) Negative proposition which begin with words such as 'often', 'seldom', 'hardly', 'scarcely' 'rarely', 'little' etc., are to be deduced to the I-type.

Examples—

(a) Few men are not honest.
(Some men are honest)

(b) Rarely is a rich man content.
(Some rich are content)

4. Some 'O' type proposition not beginning with some .....not.

(A) All negative proposition beginning with words such as all, every, any, each etc., with not are to be reduced to 'O' type propositions.

Examples—

(a) All women are not rich.
(Some women are not rich)

(b) Everyone is not there.
(Some are not there)

(c) All that glitters is not gold.
(Some glittering objects are not gold)

(B) Negative propositions with words as most 'a few' 'mostly' 'generally' 'almost' 'frequently' with not are to be reduced to the 'O type'.

Examples—

(a) Girls are usually not feminine.
(Some girls are not feminine)

(b) Students are not frequently ill-tempered.
(Some students are not ill-tempered)

(c) Act all the furniture have not been sold.
(Some furniture have not been sold)

(C) Positive proposition with beginning negative sense words such as 'few', 'seldom', 'hardly', 'scarcely', rarely, little etc., are to reduced to the 'O' type.

Examples—

(a) Few men are innocent.
(Some men are not innocent)

(b) Seldom are people jealous.
(Some people are not jealous)

(D) A negative sentence with an exception, which is not are definite are to be reduced to 'O' type.

Examples—

(a) No except one have passed.
(Some students have not passed)

(b) No girls except a few are absent.
(Some girls are not absent)

Rules for Mediate Inference

There are certain rules to derive the valid conclusion. These rules should be applied step by step to solve the questions on syllogism. To understand well these rules we can take help of Venn-diagram representation.

Rule 1—The conclusion does not contain the middle term.

Example—

Statements—

I. All boys are men.

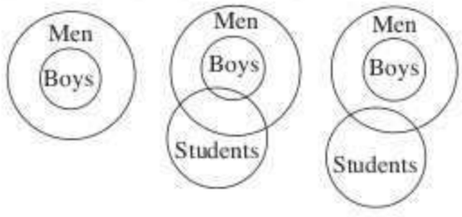
II. Some men are students.

Conclusions—

I. All men are boys.

II. Some students are men.

Since, both the conclusions 1 and 2 contain the middle term 'men' so neither of them can follow.



Rule 2—No term can be distributed in the conclusion unless it is distributed in the premises.

Example—

Statements—

I. Some men are women.

II. All women are cows.

Conclusions—

I. All cows are women.

II. Some men are cows.

Statement I is an I-type proposition which distributes neither the subject nor the predicate. Statement II is an A-type proposition which distributes the subject women only.

Conclusion I is an A-type proposition which distribute the subject 'cows' only.

Since, the term 'cows' is distributed in conclusion I without being distributed in the premises so conclusion I cannot follow.

Rule 3—The middle term must be distributed atleast once in the premises, otherwise conclusion is uncertain or doubtful.

Example—

I. All stool are chairs.

II. Some chairs are benches.

Conclusions—

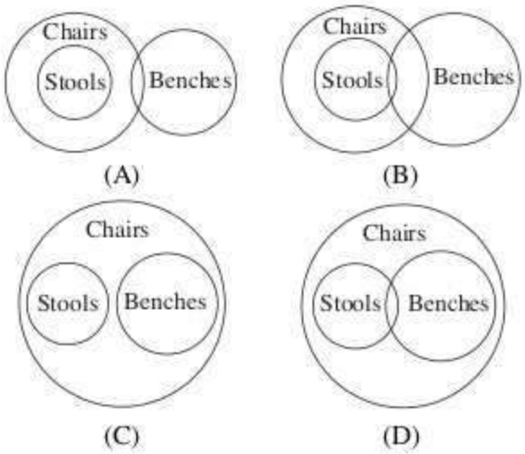
I. All stools are benches.

II. Some benches are stools.

III. No stool is a table.

Explanation—The term chair is common to both the statements and hence it is the middle term. Statement is (I) is of A-type proposition and in A-type proposition only subject is distributed, hence chair being the predicate in the statement (I) is not distributed. In the same way, chair is not distributed in the second statement because statement (II) is I-type in which neither subject nor predicate is distributed. We can analyse that middle term chair is not distributed in anyone of the statements, therefore as per rule 3, no mediate conclusion can be drawn. Thus, none of the conclusions of following statements above is a valid conclusion.

We can also explain this rule with the help of Venn-diagram.



All the four figures (A), (B), (C) and (D) represent the relationship among stool, chairs and benches as given in the statements. We can find from these four figures that we can not establish any definite relationship between stools and benches.

Though it can be concluded from above analysis that no valid conclusion can be drawn between stool and bench yet we can conclude that either some stools are benches or no stool is a table because both the conclusion pair a complementary pair.

Rule 4—If one premises is particular, conclusion is particular.

Example—

Statements—

I. Some men are intelligent.

II. All intelligent are wise.

Conclusions—

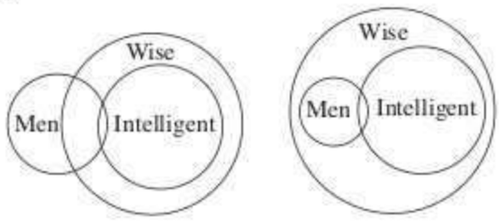
I. All men are wise.

II. No man is wise.

III. Some men are wise.

Explanation—According to this rule, statement I is particular type, therefore, conclusion (III) is the valid inference. Simultaneously, it does not violate rules (2) and (3).

We can also define this rule with the help of Venn-diagram.



In both the figures (A) and (B) it is clear that some men are wise.

Rule 5—If both the premises are particular, no conclusion follows.

Example—

Statements—

I. Some books are pencils.

II. Some pencils are erasers.

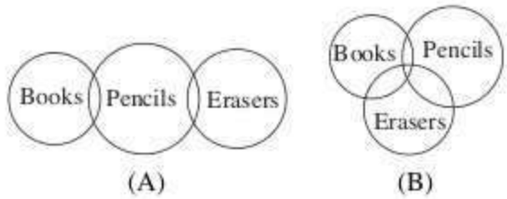
Conclusions—

I. All books are erasers.

II. Some erasers are books.

Since, both the premises are particular, no conclusion follows.

By Venn-diagram, we can check the authencity of the rule.



With the help of both the figures, we cannot deduce any inference.

Rule 6—If both the premises are negative, no conclusion follows.

Example—

Statements—

I. No flower is apple.

II. No apple is banana.

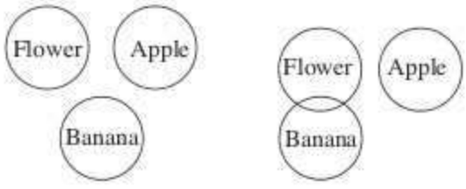
Conclusions—

I. No flower is banana.

II. Some bananas are apples.

Explanation—Since, both the statements are negative, we cannot draw any valid mediate inference from such pair of given statements. Therefore, no conclusion follows.

Venn-diagram representation.



(A) (B)

The study of both the figures (A) and (B) reveals the fact that in case both the premises are negative, no definite relationship between the terms other that the middle term can be established. Hence, conclusion I is not valid because it is not from figure (A). In the same way conclusion II is also not valid because it is not true from figure (B). Therefore, none of the conclusions is definitely true.

Rule 7—If one of the premises is negative, conclusion will always be negative.

Example—

Statements—

I. Some cups are bottles.

II. No bottle is glass.

Conclusions—

I. Some cups are glasses.

II. Some cups are not glasses.

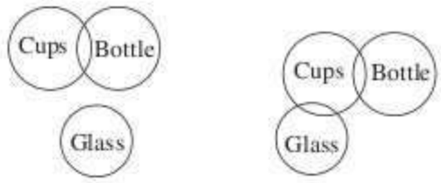
III. All glasses are cups.

IV. No cup is glass.

As mentioned in above rule (7) if one of the premises is negative, the conclusion will always be negative. From the given conclusions, we can observe that conclusions (II) and (IV) are negative. Therefore, these may be valid inferences. But for the validity of this rule they must not violate any of the other rules.

Conclusion (IV) Violate rule because cup is distributed in conclusion but it is not distributed in the statement I. This conclusion also violate rules which stipulates if one of the premises is particular, conclusion will be particular but conclusion (IV) is universal. Conclusion II complies with the rule as term glass which is distributed in the conclusion is also distributed in the statement II and also conclusion (II) being of particular quantity.

Venn-diagram.



(A) (B)

From the above mentioned graphical Venn-diagram representation, we can observe that no valid representation between cups and glass can be established. But we can definitely conclude that part of the cups which is bottle can never be glass because no cup is glass. Therefore, from Venn-diagram also, we draw valid inference that some cups are not glass.

Rule 8—If both the premises are affirmative, the conclusions would be affirmative.

Example—

Statements—

I. All women are married.

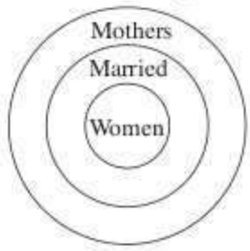
II. All married are mothers.

Conclusions—

I. All women are mothers.

II. Some women are not mothers.

Here, both the premises are affirmative, the conclusion will be affirmative. Venn-diagram representation :



In above mentioned diagram it is clear that all women are mothers.

Case of complimentary pair of conclusions—In drawing mediate inferences from given statements, it is expected to be more attentive to select a complimentary pair of conclusions in which neither of the conclusions is individually true but a combination of both makes a complementary pair. In a complimentary pair, atleast one of the two statements is always true. As we have already discussed in a rule that in the statements where middle term is not distributed no valid inference but there still exists a possibility that a complimentary pair of conclusions follows from the given statement.

Example—

Statements—

I. Some cups are books.

II. Some books are white.

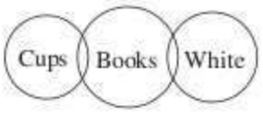
Conclusions—

I. Some cups are white.

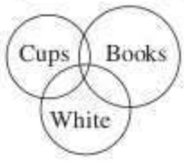
II. No cup is white.

From the above example, it is clear that neither of the conclusions is definitely true as per rule because middle

term is not distributed in the statements. This situation can become more clear with the help of Venn-diagram.



(A)



(B)

From the these two figures, it is clear that conclusion (I) Some cups are white is wrong because it not true from figure (A). In the same way conclusion (II) No cup is white is also wrong because it is not true from figure (B). However, it is to be noted from the figures that either conclusion (I) or (II) follows from the statement.

Exercise

Directions—(Q. 1–5) In each of the questions below are given four statements followed by four conclusions **numbered** I, II, III and IV. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

1. **Statements :**
   Some bags are trunks.
   All trunks are shirts.
   Some shirts are books.
   All books are shops.
   Conclusions :
   I. Some shops are bags.
   II. Some books are bags.
   III. Some shops are shirts.
   IV. Some shirts are bags.
   (A) Only I and II follow
   (B) Only I and III follow
   (C) Only III and IV follow
   (D) Only II and IV follow
   (E) None of these

2. **Statements :**
   All pens are chairs.
   All flowers are chairs.
   All chairs are trucks.
   All trees are trucks.
   Conclusions :
   I. Some trucks are pens.
   II. Some trucks are chairs.
   III. Some trees are pens.
   IV. Some trees are chairs.
   (A) Only I and III follow
   (B) Only I and II follow
   (C) Only III and IV follow
   (D) Only II and IV follow
   (E) None of these

3. **Statements :**
   All desks are pillars.
   Some pillars are towns
   All towns are benches.
   Some benches are cars.
   Conclusions :
   I. Some cars are towns.
   II. Some benches are desks.
   III. Some benches are pillars.
   IV. Some cars are pillars.
   (A) None follows (B) Only I follows
   (C) Only II follows (D) Only III follows
   (E) Only IV follows

4. **Statements :**
   All stations are houses.
   No house is garden.
   Some gardens are rivers.
   All rivers are ponds.
   Conclusions :
   I. Some ponds are gardens.
   II. Some ponds are stations.
   III. Some ponds are houses.
   IV. No pond is station.
   (A) Only I follows
   (B) Only either II or IV follows
   (C) Only I and II follow
   (D) Only I and IV follow
   (E) None of these

5. **Statements :**
   Some towers are lanes.
   Some lanes are roads.
   Some roads are rivers.
   Some rivers are jungles.
   Conclusions :
   I. Some jungles are roads.
   II. Some roads are lanes.
   III. Some jungles are towers.
   IV. No jungle is road.
   (A) Only I follows
   (B) Only II follows
   (C) Only either I or IV follows
   (D) Only IV follow
   (E) Only either I or IV and II follow

Directions—(Q. 6–13) In each of the questions below are given three statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Give Answer :

(A) If only Conclusion I follows.
(B) If only Conclusion II follows.

(C) If either Conclusion I or II follows.
(D) If neither Conclusion I nor II follows.
(E) If both Conclusions I and II follow.

6. **Statements :** Some pearls are stones. All stones are bricks. All bricks are walls.
Conclusions :
I. Some pearls are bricks.
II. Some pearls are walls.

7. **Statements :** All books are magazines. Some magazines are notebooks. Some notebooks are papers.
Conclusions :
I. Some books are notebooks.
II. Some magazines are papers.

8. **Statements :** All mobiles are phones. All phones are computers. All computers are scanners.
Conclusions :
I. All mobiles are computers.
II. All phones are scanners.

9. **Statements :** All cars are buses. Some buses are scooters. No scooter is a train.
Conclusions :
I. No bus is a train.
II. Some buses are trains.

10. **Statements :** Some chairs are wheels. Some wheels are sofa sets. All sofa sets are cupboards.
Conclusions :
I. Some wheels are cupboards.
II. Some chairs are sofa sets.

11. **Statements :** Some boxes are bags. All bags are trunks. All trunks are drawers.
Conclusions :
I. All bags are drawers.
II. All trunks are bags.

12. **Statements :** Some coins are notes. All notes are cards. All cards are plastics.
Conclusions :
I. Some coins are cards.
II. All notes are plastics.

13. **Statements :** Some apples are oranges. Some oranges are grapes. All grapes are bananas.
Conclusions :
I. Some apples are bananas.
II. Some oranges are bananas.

Directions—(Q. 14-19) In each of the questions below are given three statements followed by three conclusions numbered I, II & III. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

14. **Statements :**
All telephones are wires.
All wires are tents.
All tents are cans.
Conclusions :
I. Some cans are wires.
II. Some tents are telephones.
III. Some cans are telephones.
(A) Only I and II follow
(B) Only II and III follow
(C) Only I and III follow
(D) All I, II and III follow
(E) None of these

15. **Statements :**
Some cards are pictures.
All pictures are paints.
Some paints are nails.
Conclusions :
I. Some paints are cards.
II. Some nails are cards.
III. Some nails are pictures.
(A) None follows (B) Only I follows
(C) Only II follows (D) Only III follows
(E) Only I and II follow

16. **Statements :**
All walls are glasses.
No glass is table.
Some tables are windows.
Conclusions :
I. Some windows are walls.
II. Some tables are walls.
III. Some windows are glasses.
(A) None follows (B) Only I follows
(C) Only II follows (D) Only III follows
(E) Only I and II follow

17. **Statements :**
All baskets are poles.
Some poles are lamps.
All lamps are roads.
Conclusions :
I. Some lamps are baskets.
II. Some roads are poles.
III. Some lamps are poles.
(A) Only I and II follow
(B) Only I and III follow
(C) Only II and III follow
(D) All I, II and III follow
(E) None of these

18. **Statements :**
Some leaves are baskets.
Some baskets are flowers.
Some flowers are lakes.
Conclusions :
I. Some lakes are baskets.
II. Some flowers are lakes.
III. No lake is basket.

(A) Only I follows
(B) Only II follows
(C) Only III follows
(D) Only either I or III follows
(E) None of these

19. **Statements :**
All pictures are bands.
Some bands are chairs.
Some chairs are tables.
Conclusions :
I. Some tables are bands.
II. Some chairs are pictures.
III. Some tables are pictures.
(A) None follows (B) Only I follows
(C) Only II follows (D) Only I and II follow
(E) Only III follows

Directions—(Q. 20–24) In each of the questions below are given four statements followed by three conclusions numbered I, II and III. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

20. **Statements :**
Some plates are spoons.
All spoons are forks.
All forks are bowls.
Some bowls are utensils.
Conclusions :
I. Some plates are bowls.
II. All spoons are bowls.
III. Some forks are utensils.
(A) Only I follows
(B) Only II follows
(C) Only I and III follow
(D) Only I and II follow
(E) None of these

21. **Statements :**
Some books are files.
All files are discs.
Some discs are boards.
All boards are keys.
Conclusions :
I. Some books are keys.
II. No book is key.
III. Some discs are keys.
(A) Only III follows
(B) Only I and III follow
(C) Either I or II and III follow
(D) All follow
(E) None of these

22. **Statements :**
All buses are trains.
Some trains are cars.
No car is scooter.
All scooters are jeeps.
Conclusions :
I. Some cars are buses.
II. All jeeps are scooters.
III. No jeep is train.
(A) Only I follows
(B) Only II follows
(C) Only III follows
(D) Only either I or III follows
(E) None of these

23. **Statements :**
All curtains are pillows.
No pillow is mattress.
Some mattresses are beds.
All beds are sofas.
Conclusions :
I. No bed is pillow.
II. Some mattresses are sofas.
III. Some beds are pillows.
(A) Only either I or III follows
(B) Only II follows
(C) Only II and either I or III follow
(D) Only I and II follow
(E) All follow

24. **Statements :**
Some pulses are grains.
Some grains are sprouts.
All sprouts are nuts.
No fruit is nut.
Conclusions :
I. Some nuts are pulses.
II. Some nuts are grains.
III. No fruit is sprout.
(A) Only I and III follow
(B) Only I and II follow
(C) Only either I or II follows
(D) None follows
(E) None of these

Directions—(Q. 25 to 31) In each question below are given three statements followed by two conclusions numbered I and II. You have to take the three given statements to be true even if they seem to be at variance from commonly known facts and then decide which of the given conclusions logically follows from the three given statements disregarding commonly known facts. Give the answer—
(A) if only conclusion I follows.
(B) if only conclusion II follows.

(C) if either conclusion I or II follows.
(D) if neither conclusion I nor II follows.
(E) if both conclusions I and II follow.

25. **Statements :**
Some pins are forks.
All forks are keys.
No key is lock.
Conclusions :
I. Some locks are pins.
II. No lock is a pin.

26. **Statements :**
Some shirts are trousers.
Some trousers are jackets.
All jackets are shawls.
Conclusions :
I. Some shawls are shirts.
II. Some jackets are shirts.

27. **Statements :**
Some leaves are plants.
Some plants are trees.
Some trees are fruits.
Conclusions :
I. Some fruits are trees.
II. Some trees are plants.

28. **Statements :**
Some rats are dogs.
Some dogs are horses.
Some horses are camels.
Conclusions :
I. Some horses are rats.
II. Some camels are horses.

29. **Statements :**
Some books are dictionaries.
Some dictionaries are files.
Some files are papers.
Conclusions :
I. Some papers are files.
II. Some files are books.

30. **Statements :**
Some stones are rocks.
All rocks are clouds.
All clouds are rains.
Conclusions :
I. Some rains are stones.
II. Some clouds are rocks.

31. **Statements :**
Some keys are holes.
All holes are folders.
Some folders are stands.
Conclusions :
I. Some stands are keys.
II. Some stands are holes.

Directions—(Q. 32–37) In each of the questions below are given three statements followed by two conclusions numbered I & II. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts. Give answers :
(A) If only Conclusion I follows.
(B) If only Conclusion II follows.
(C) If either Conclusion I or II follows.
(D) If neither Conclusion I nor II follows.
(E) If both Conclusions I and II follow.

32. **Statements :**
All forests are villages.
All villages are trains.
All trains are buses.
Conclusions :
I. Some buses are villages.
II. Some trains are forests.

33. **Statements :**
All books are radios.
No radio is pen.
Some pens are tables.
Conclusions :
I. Some tables are books.
II. Some pens are books.

34. **Statements :**
All sticks are hotels.
Some hotels are buildings.
Some buildings are windows.
Conclusions :
I. Some windows are hotels.
II. Some buildings are sticks.

35. **Statements :**
All goats are lions.
Some lions are horses.
All horses are camels.
Conclusions :
I. Some camels are lions.
II. Some camels are goats.

36. **Statements :**
Some rocks are toys.
Some toys are flowers.
All flowers are pots.
Conclusions :
I. Some pots are rocks.
II. Some pots are toys.

37. **Statements :**
Some desks are chairs.
Some chairs are benches.
Some benches are roads.

Conclusions :

I. Some roads are desks.

II. No road is desk.

Directions (Q. 38 to 42)—In each of the questions below are given four statements followed by three conclusions numbered I, II and III. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

38. **Statements :** Some pens are sticks. Some sticks are canes.

All canes are scales. No scale is weight.

Conclusions :

I. Some sticks are scales.

II. No stick is scale.

III. No cane is weight.

(A) Only either I or II follows

(B) Only I and III follow

(C) Only either I or II and III follow

(D) All I, II and III follow

(E) None of these

39. **Statements :** Some folders are boxes. Some boxes are bags.

All bags are containers. Some bags are sacks.

Conclusions :

I. No folder is bag.

II. Some boxes are containers.

III. Some sacks are containers.

(A) Only I and II follow

(B) Only II and III follow

(C) Only I and III follow

(D) All follow

(E) None follows

40. **Statements :** Some insects are pests. All pests are birds.

No bird is amphibian. All amphibians are animals.

Conclusions :

I. No animal is bird.

II. Some insects are birds.

III. No pests are amphibians.

(A) Only I follows (B) Only II follows

(C) Only III follows (D) Only II and III follow

(E) None of these

41. **Statements :** Some paints are colours. All colours are solutions.

Some solutions are liquids. All liquids are solids.

Conclusions :

I. Some paints are solutions.

II. Some colours are liquids.

III. Some solutions are solids.

(A) Only I and II follow

(B) Only II and III follow

(C) All I, II and III follow

(D) None follows

(E) None of these

42. **Statements** : All locks are keys. All keys are doors.

Some doors are windows. Some windows are floors.

Conclusions :

I. Some keys are windows.

II. No floor is door.

III. No lock is window.

(A) None follows (B) Only I follows

(C) Only I and II follow (D) Only III follows

(E) None of these

Directions—(Q. 43–47) In each question below are given three statements followed by two conclusions numbered I and II. You have to take the three given statements to be true even if they seem to be at variance from commonly known facts and then decide which of the given conclusions logically follows from the three given statements, disregarding commonly known facts. Then decide which of the answer (A), (B), (C), (D) and (E) is correct answer and indicate it on the answersheet. Give answer—

(A) If only conclusion I follows

(B) If only conclusion II follows

(C) If either conclusion I or conclusion II follows

(D) If neither conclusion I nor conclusion II follows

(E) If both conclusions I and II follow

43. **Statements :**

Some cards are plastics.

Some plastics are metals.

All metals are pots.

Conclusions :

I. Some pots are cards.

II. No pot is a card.

44. **Statements :**

All chairs are tables.

All tables are trains.

All trains are buses.

Conclusions :

I. All tables are buses.

II. All trains are tables.

45. **Statements :**

Some machines are computers.

Some computers are calculators.

Some calculators are phones.

Conclusions :

I. Some phones are computers.

II. Some computers are machines.

46. **Statements :**

All spoons are bowls.

Some bowls are glasses.

Some glasses are plates.

Conclusions :

I. Some glasses are spoons.

II. Some plates are bowls.

47. **Statements :**

Some envelopes are packets.

Some packets are boxes.

All boxes are parcels.

Conclusions :

I. Some parcels are packets.

II. Some parcels are boxes.

Directions—(Q. 48–53) In each of the questions below are given four statements followed by four conclusions numbered I, II, III & IV. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

48. **Statements :**

All desks are pencils.

All pencils are windows.

All windows are doors.

All doors are walls.

Conclusions :

I. Some walls are windows.

II. All desks are doors.

III. Some doors are desks.

IV. Some windows are desks.

(A) Only I, II and III follow

(B) Only II, III and IV follow

(C) Only I, III and IV follow

(D) Only I, II and IV follow

(E) None of these

49. **Statements :**

Some boxes are tablets.

Some tablets are toys.

All toys are jungles.

Some jungles are trees.

Conclusions :

I. Some trees are tablets.

II. Some tablets are jungles.

III. Some jungles are toys.

IV. Some toys are boxes.

(A) None follows (B) Only I follows

(C) Only II follows (D) Only II and III follow

(E) Only IV follows

50. **Statements :**

All blades are trains.

Some trains are rods.

All rods are papers.

Some papers are windows.

Conclusions :

I. Some windows are blades.

II. Some papers are trains.

III. Some trains are blades.

IV. Some papers are blades.

(A) Only I and II follow

(B) Only II and III follow

(C) Only III and IV follow

(D) Only I and III follow

(E) None of these

51. **Statements :**

Some chains are rings.

Some rings are bangles.

Some bangles are hands.

Some hands are ears.

Conclusions :

I. Some ears are bangles.

II. Some bangles are chains.

III. Some hands are rings.

IV. No chain is bangle.

(A) None follows

(B) Only II follows

(C) Only IV follows

(D) Only either II or IV follows

(E) Only III follows

52. **Statements :**

All books are cards.

Some cards are benches.

All benches are chairs.

Some chairs are tables.

Conclusions :

I. Some chairs are cards.

II. Some tables are chairs.

III. Some cards are books.

IV. Some chairs are benches.

(A) Only II, III and IV follow

(B) Only I, II and III follow

(C) Only I, III and IV follow

(D) All follow

(E) None of these

53. **Statements :**

All dolls are mats.

No mat is sofa.

Some sofas are rooms.

All rooms are hills.

Conclusions :

I. Some hills are dolls.

II. Some rooms are dolls.

III. Some rooms are mats.

IV. Some hills are mats.

(A) None follows (B) Only I follows

(C) Only II follows (D) Only III follows

(E) Only IV follows

Directions—(Q. 54–59) In each of the questions below are given four statements followed by three

conclusions numbered I, II and III. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

54. **Statements :**
All coins are glasses.
Some glasses are cups.
Some cups are boxes.
All boxes are pins.
Conclusions :
I. Some coins are cups.
II. Some pins are glasses.
III. Some cups are pins.
(A) None follows (B) Only I follows
(C) Only III follows (D) Only II and III follow
(E) None of these

55. **Statements :**
Some pens are pencils.
All pencils are caps.
All caps are buses.
Some buses are trains.
Conclusions :
I. Some trains are caps.
II. Some pens are buses.
III. Some pencils are trains.
(A) Only I follows
(B) Only II follows
(C) Only I and III follow
(D) None follow
(E) All I, II and III follow

56. **Statements :**
All shirts are skirts.
All skirts are banks.
All banks are roads.
All roads are brushes.
Conclusions :
I. All banks are skirts.
II. All roads are banks.
III. Some brushes are shirts.
(A) Only I follows
(B) Only III follows
(C) Only I and III follow
(D) All I, II and III follow
(E) None follows

57. **Statements :**
Some fishes are plates.
Some plates are spoons.
Some spoons are plants.
All plants are crows.
Conclusions :
I. Some plates are crows.
II. Some crows are spoons.
III. Some plants are spoons.
(A) Only I follows
(B) Only I and II follow
(C) None follows
(D) Only II and III follow
(E) Either I or III follows

58. **Statements :**
Some eggs are hens.
Some hens are ducks.
All ducks are pigeons.
All pigeons are sparrows.
Conclusions :
I. All ducks are sparrows.
II. No egg is duck.
III. Some sparrows are hens.
(A) Only I follows
(B) Only I and II follow
(C) Only III follows
(D) Only I and III follow
(E) All I, II and III follow

59. **Statements :**
No man is tiger.
No tiger is cat.
Some cats are lions.
Some lions are tigers.
Conclusions :
I. Some tigers are cats.
II. Some cats are men.
III. Some lions are men.
(A) None follows
(B) Only III follows
(C) Only I and II follow
(D) Only I follows
(E) Only II and III follow

Directions—(Q. 60–67) In each of the questions below are given three statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read both the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts. Give the answers—

(A) If only Conclusion I follows
(B) If only Conclusion II follows
(C) If either Conclusion I or II follows
(D) If neither Conclusion I nor II follows
(E) If both Conclusions I and II follow

60. **Statements :**
All cars are wheels.
No wheel is chair.
Some chairs are spokes.
Conclusions :
I. Some spokes are cars.
II. Some spokes are wheels.

61. **Statements :**
Some tapes are trunks.
Some trunks are halls.
All halls are desks.
Conclusions :
I. Some desks are tapes.
II. Some desks are trunks.

62. **Statements :**
Some books are chairs.
Some chairs are pictures.
Some pictures are pencils.
Conclusions :
I. Some pencils are books.
II. Some pictures are books.

63. **Statements :**
All tables are pens.
All pens are papers.
All papers are tablets.
Conclusions :
I. All tables are papers.
II. Some tablets are pens.

64. **Statements :**
All buildings are houses.
Some houses are towers.
All towers are huts.
Conclusions :
I. Some huts are houses.
II. Some huts are buildings.

65. **Statements :**
Some leaves are branches.
All branches are flowers.
Some flowers are fruits.
Conclusions :
I. Some fruits are leaves.
II. Some fruits are branches.

66. **Statements :**
Some novels are desks.
No desk is ladder.
Some ladders are chimneys.
Conclusions :
I. Some chimneys are novels.
II. No novel is chimney.

67. **Statements :**
All beads are rings.
All bangles are rings.
All rings are diamonds.
Conclusions :
I. All beads are diamonds.
II. All bangles are diamonds.

Directions—(Q. 68–72) In each of the questions below are given four statements followed by four conclusions numbered I, II, III and IV. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

68. **Statements :**
Some apples are bananas. All bananas are pears.
Some pears are oranges. All oranges are guavas.
Conclusions :
I. Some guavas are apples.
II. Some guavas are pears.
III. Some oranges are bananas.
IV. Some pears are apples.
(A) Only I and III follow
(B) Only II and IV follow
(C) Only I and II follow
(D) Only III and IV follow
(E) None of these

69. **Statements :**
All pictures are toys. Some toys are frames.
All frames are kites. No kite is doll.
Conclusions :
I. Some dolls are toys.
II. Some kites are toys.
III. No doll is toy.
IV. Some frames are pictures.
(A) None follows
(B) Only II follows
(C) Only either I or III follows
(D) Only either I or III and II follow
(E) Only either I or III and II and IV follow

70. **Statements :**
All shops are markets. All goods are markets.
All bottles are shops. Some markets are huts.
Conclusions :
I. Some huts are bottles.
II. Some goods are bottles.
III. All bottles are markets.
IV. Some shops are huts.
(A) Only I and III follow
(B) Only III follows
(C) Only II, III and IV follow
(D) Only I, III and IV follow
(E) None of these

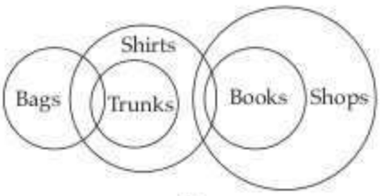
71. **Statements :**
Some books are papers. Some papers are roads.
Some roads are lanes. Some lanes are streets.
Conclusions :
I. Some streets are roads.
II. Some lanes are books.
III. Some streets are books.
IV. Some roads are books.

(A) None follows
(B) Only I and II follow
(C) Only III and IV follow
(D) Only I, II and III follow
(E) Only II follows

72. **Statements :**
Some roses are petals. All petals are fruits.
All fruits are trees. Some trees are flowers.
Conclusions :
I. Some trees are roses.
II. Some flowers are fruits.
III. Some fruits are petals.
IV. All petals are trees.
(A) All follow
(B) Only I and III follow
(C) Only I and IV follow
(D) Only II, III and IV follow
(E) None of these

Answers with Explanations

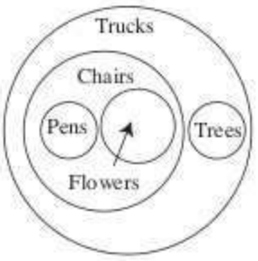
1. (C)



Or

Only III and IV follow.

2. (B)



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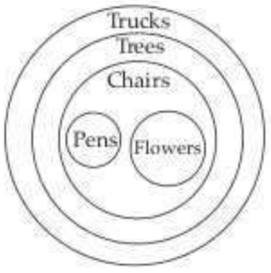
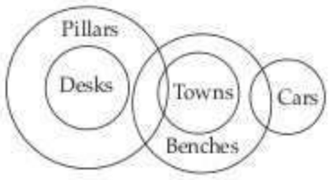


Only I and II follow.

3. (D)



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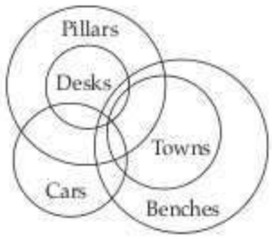
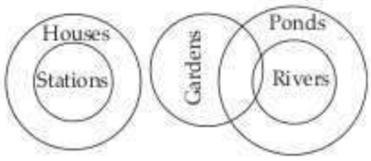


Only III follows.

4. (E)



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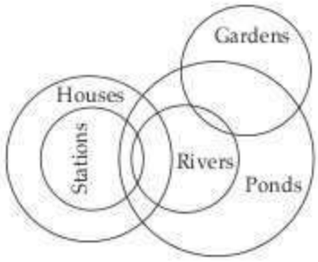
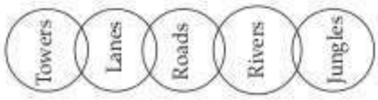


Only I and either II or IV follow.

5. (E)



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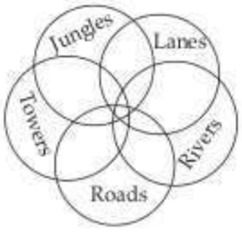
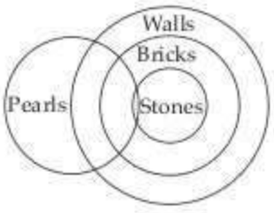


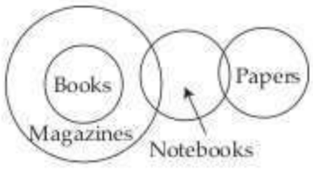
Only either I or IV and II follow.

6. (E)



I and II both conclusions follow.

7. (D)



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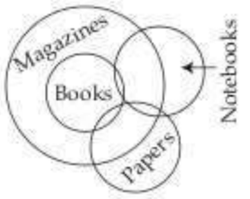
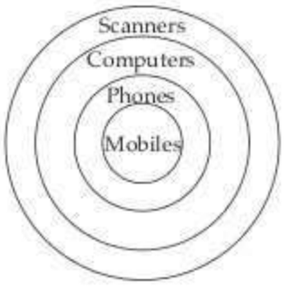


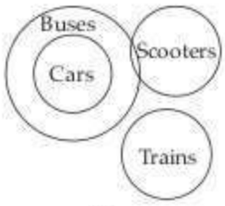
Neither I nor II follows.

8. (E)



I and II both conclusions follow.

9. (C)



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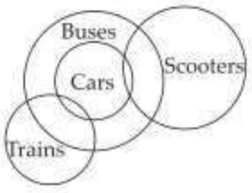
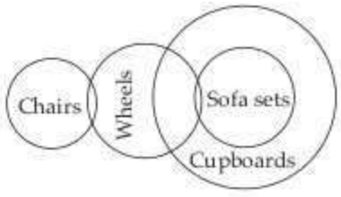


Either I or II follows.

10. (A)



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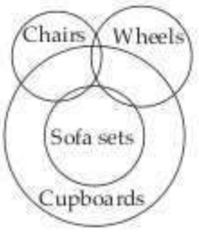
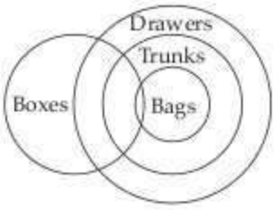


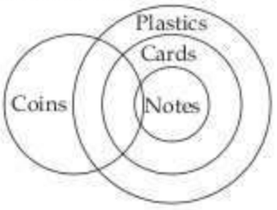
Only I conclusion follows.

11. (A)



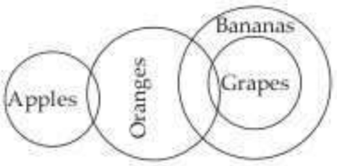
Only I conclusion follows.

12. (E)



I and II both conclusions follows.

13. (B)



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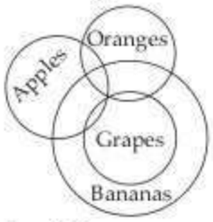
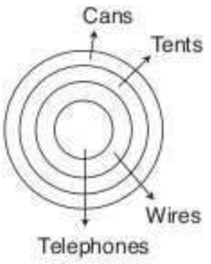


Only II conclusion follows.

14. (D)



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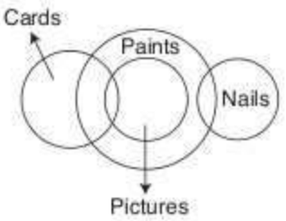

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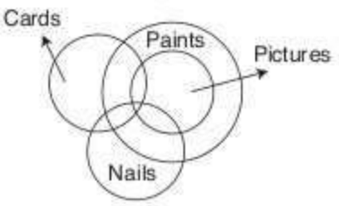
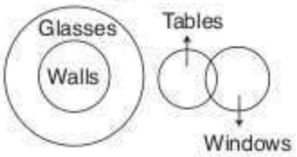


16. (A)



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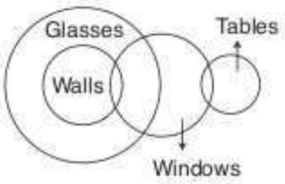
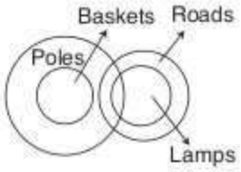


17. (C)



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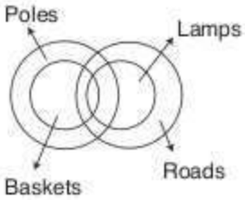
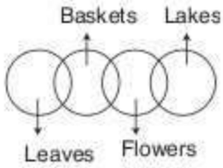


18. (E)



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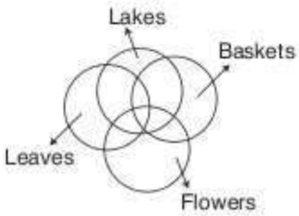
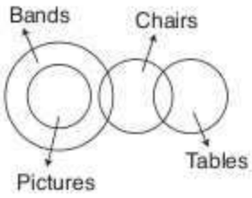


19. (A)



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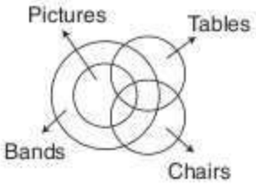
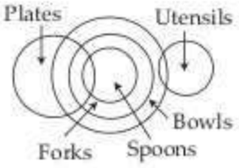


20. (D)



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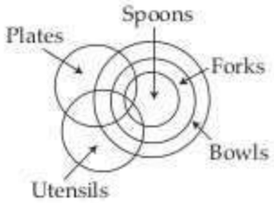
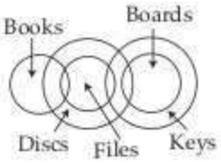


21. (C)



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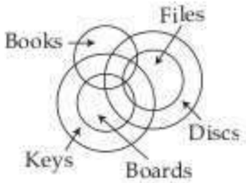
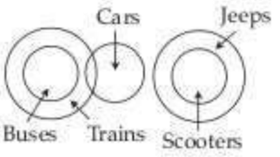


22. (E)



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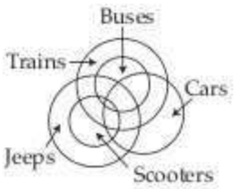
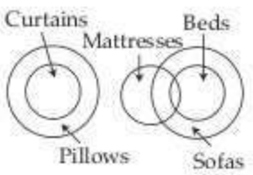


23. (C)



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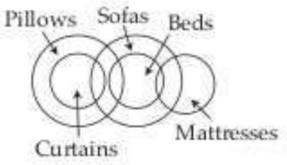
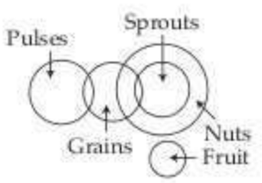


24. (A)



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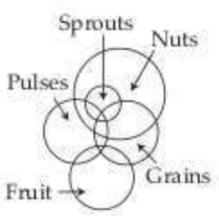
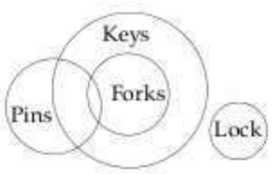


25. (C)



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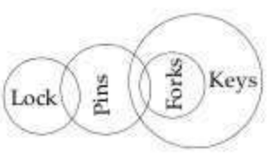
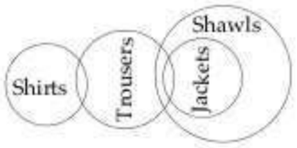


26. (D)



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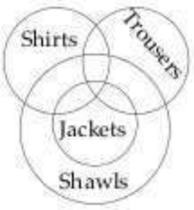
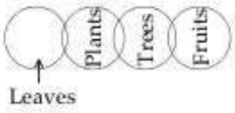


27. (E)



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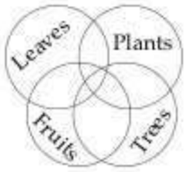
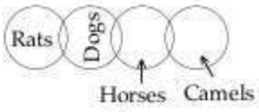


28. (B)



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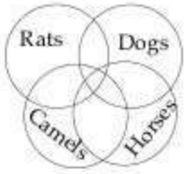
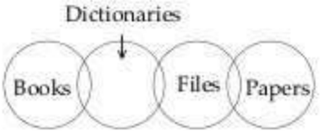


29. (A)



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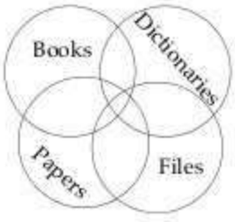
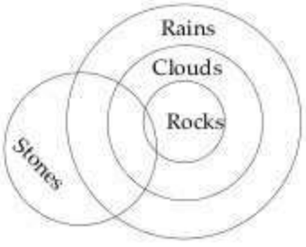
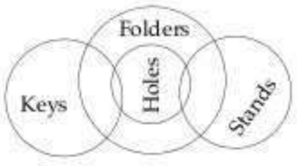


30. (E)



31. (D)



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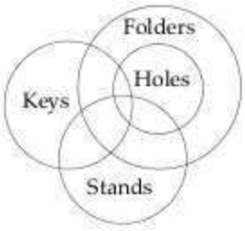

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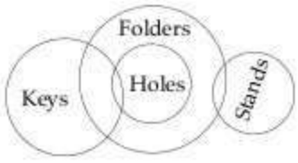
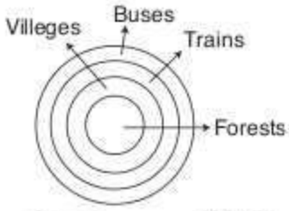
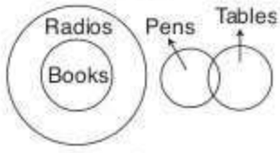


32. (E)



33. (D)



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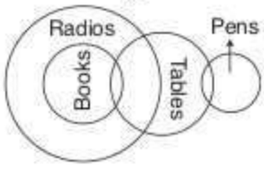
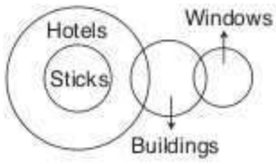


34. (D)



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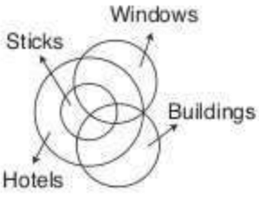
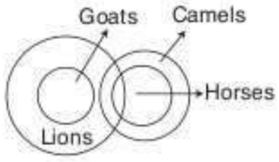


35. (A)



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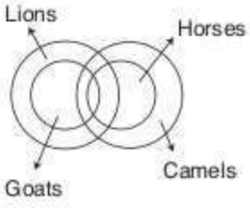
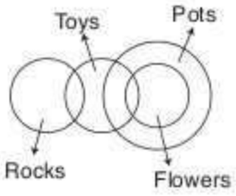


36. (B)



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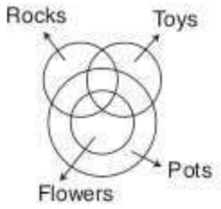
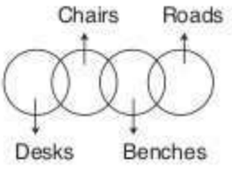


37. (C)



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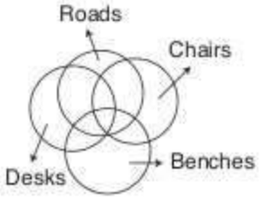
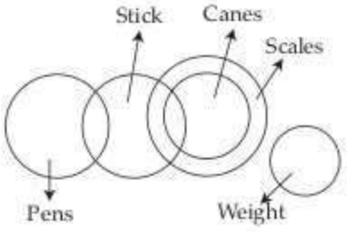


38. (B)



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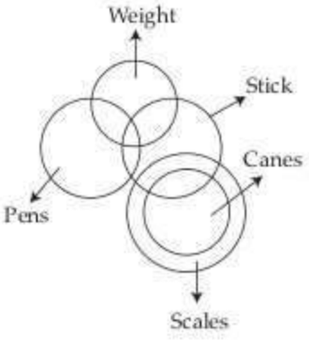
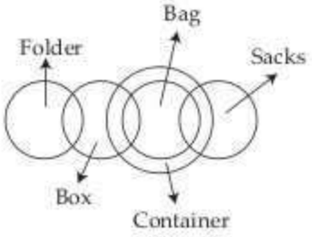


39. (B)



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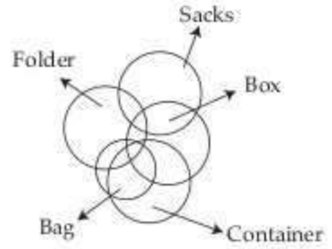
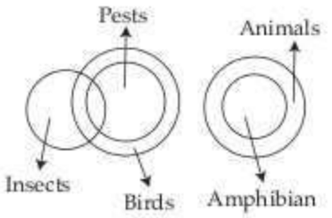


40. (D)



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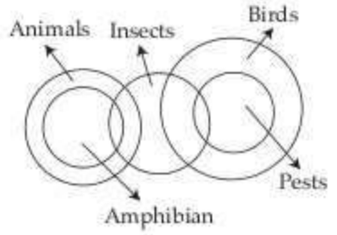
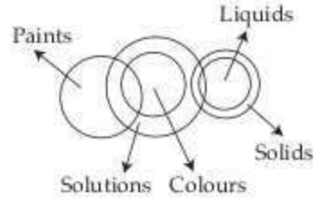


41. (E)



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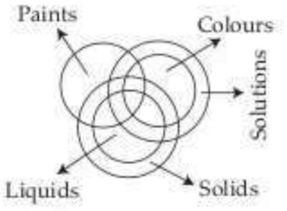
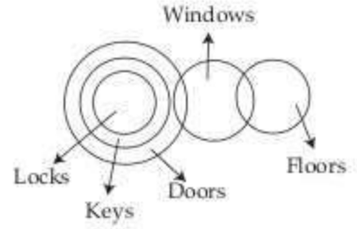


Only I and III follows.

42. (A)



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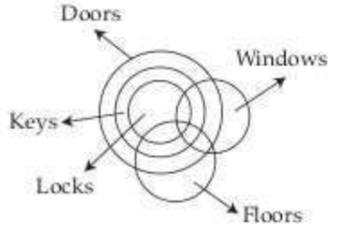
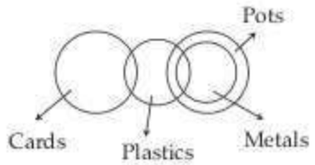


None follows.

43. (C)



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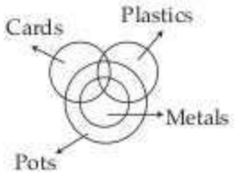
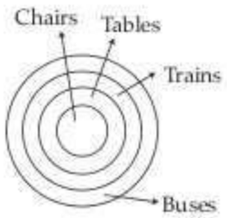
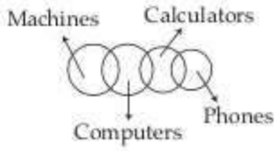


44. (A)



45. (B)



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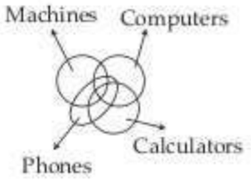
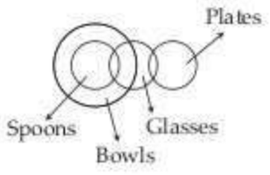


46. (D)



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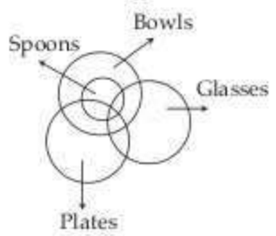
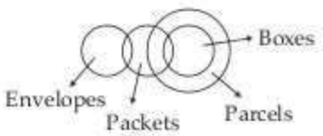


47. (E)



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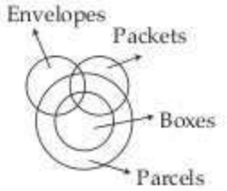
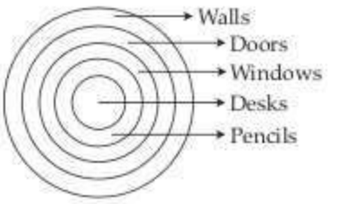
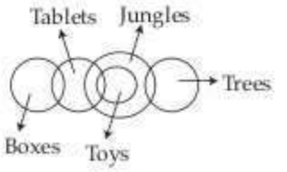


48. (E)



49. (D)



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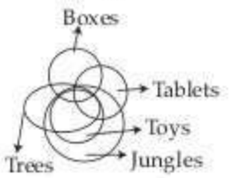
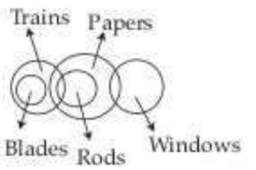


50. (B)



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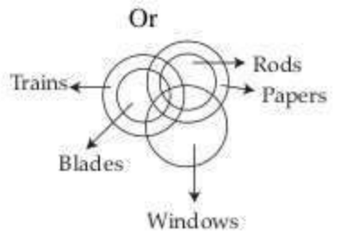
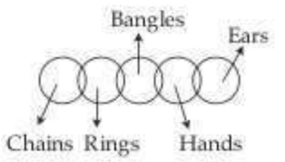


51. (D)



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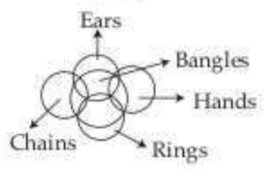
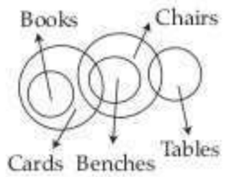


52. (D)



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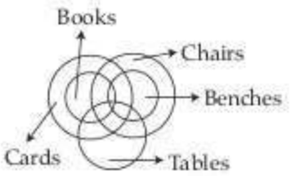
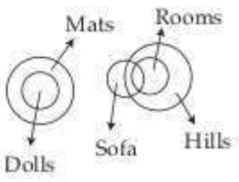


53. (A)



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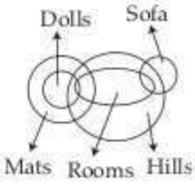
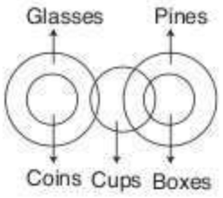


54. (C)



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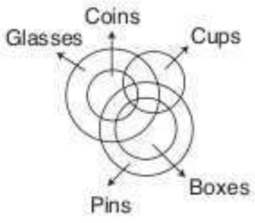

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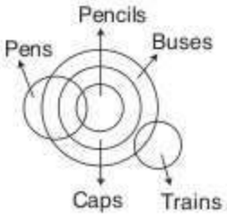

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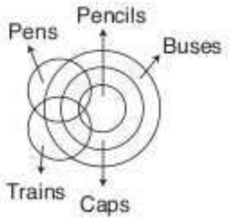

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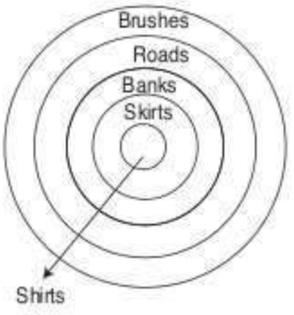
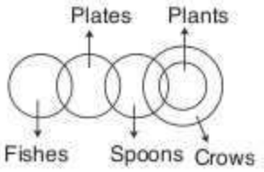


57. (D)



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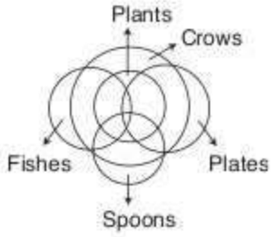

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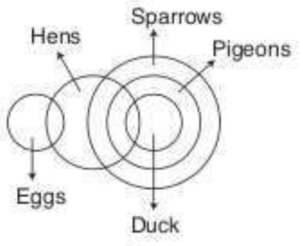

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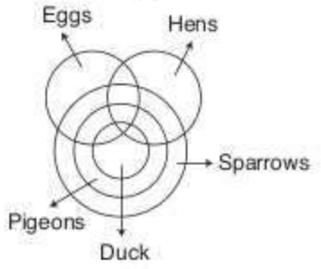

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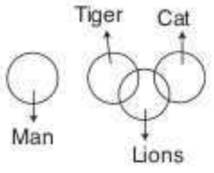

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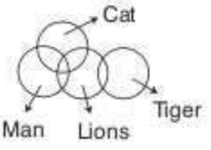
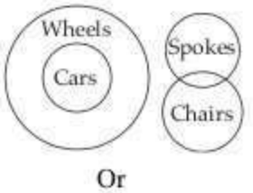


60. (D)



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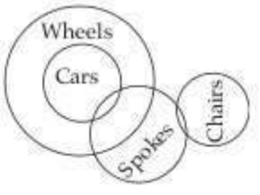
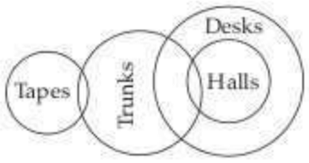


None follows.

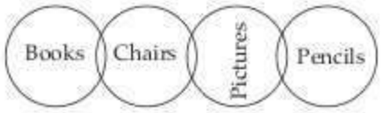
61. (B)



Or

Only II follows.

62. (D)



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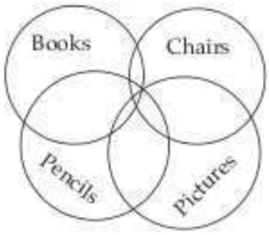
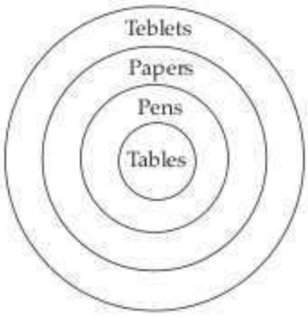


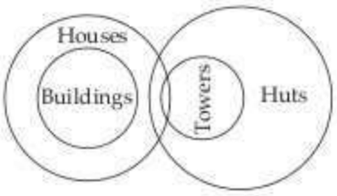
None follows.

63. (E)



Both follows.

64. (A)



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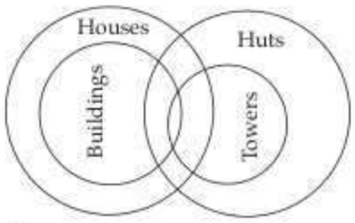
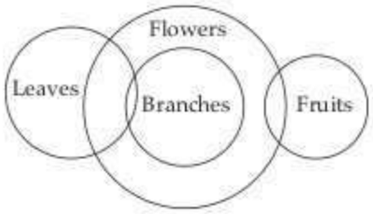


Only I follows.

65. (D)



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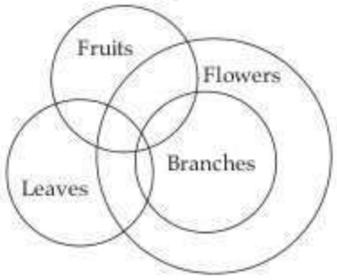
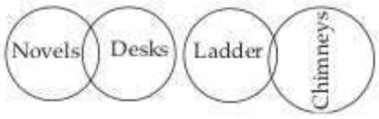


None follows.

66. (C).



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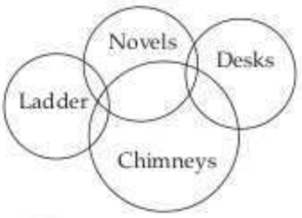
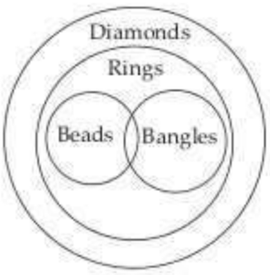


Either I or II follows.

67. (E)



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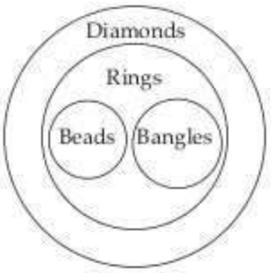
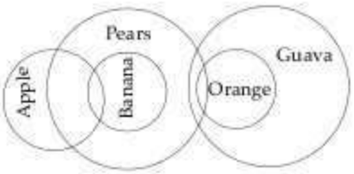


Both follow.

68. (B)



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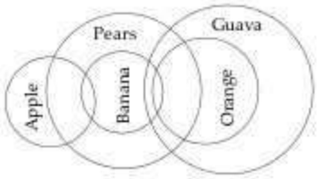
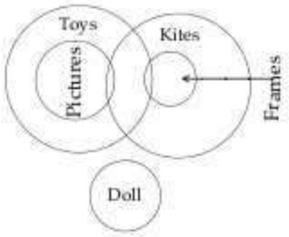


Or

∴ Only II and IV follow.

69. (D)



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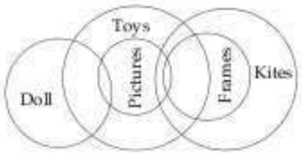


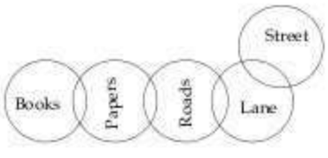
Either I or III and II follow.

70. (B)

Or

Only III follows.

71. (A)



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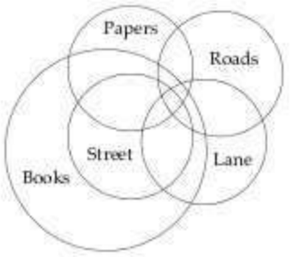
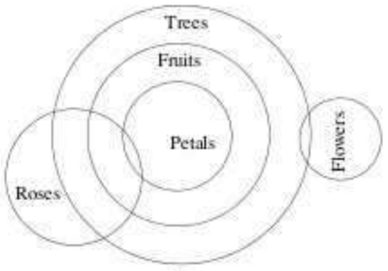
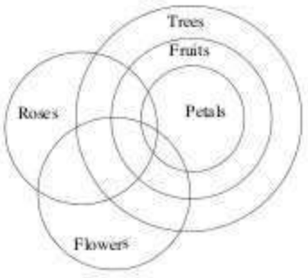


None follows.

72. (E)



Or



Only I, III and IV follow.

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Statement and Conclusion

In this type of questions, one statement which is followed by two or more conclusions, is given. The candidates are required to find out which of the conclusions, logically follow from the given statement.

The students are advised to keep in mind the following important tips while solving such questions.

Some Important Tips

1. Consider only the matter which is given in the statement. Do not add anything in the statement from your side.

Example :

Statement—Now-a-days, the sale of television sets of company 'X' has increased.

Conclusions—

I. The sale of television sets of other companies has decreased.

II. The sale of television sets of company 'X' was nil in past.

Explanation : In the statement, nothing is said about the sale of television sets of other companies. Hence, conclusion I is not valid while the second conclusion is not related to the statement. Hence, it is also not valid.

2. You should avoid the presumption and it should be minded that the conclusion may not be converted into a course of action.

Example :

Statement—A large number of children have been admitted in the hospital. By symptoms of their disease it is thought that their food was poisonous. It is assumed that the packed milk was defective.

Conclusions—

I. Generally packed milk becomes poisonous.

II. Available packed milks in the market have been checked.

Explanation : Conclusion I is preassumption. Hence, it is not valid while nothing is said about the conclusion II, in the statement. Hence, it is also not valid.

3. If advice, result, remedy are related to the statement then they are valid.

Example :

Statement—In many countries of the world there are many stores of crude oil in abundance. But its consumption is so much that in order to fulfil the demand, it is imported from the gulf-countries. Its consumption is increasing so rapidly that world's crude oil stores have a fear of finished off.

Conclusions—

I. The conservation of crude oil is very necessary.

II. The gulf countries produce more crude oil than their necessity.

Explanation : From the last sentence of the statement, conclusion I is an advice. Hence, conclusion I is valid. Conclusion is directly related to the first sentence of the statement. Hence, it is also valid.

4. If the statement is related to a publicity or an advertisement and conclusion fulfils the main purpose then it is valid.

Example :

Statement—If you are a skillful mechanical engineer, we want to engage you in our organization—an advertisement of company 'X'.

Conclusions—

I. The company 'X' thinks that an engineer is good worker.

II. The company 'X' is in need of engineers.

Explanation : Both the conclusions are valid because the company thinks that an engineer is a good worker and it is also in need of engineers, because it is given in advertisement.

5. Generally the past statement is not valid.

Example :

Statement—Retired I.P.S. Officer Shri Singh has taken the charge of the post of director of the Central Investigation Bureau. It is hoped that there will be improvement in the administration of organization.

Conclusions—

I. There was not any director before Shri Singh in the organization.

II. Shri Singh has worked on this post in other department in past.

Explanation : None of the conclusions is valid because both the informations are of past and nothing is said in the statement about these informations.

6. If some law or any correction is talked about in the statement then things related to it will be taken as conclusion because the idea of making a law or correction is that people will follow it. But mind it that conclusion should directly connected to the statement.

Example :

Statement—The present condition of the court were strongly built in decade of eights when the court one after the other gave judgements according to which government officials and rulers had to improve their work conditions.

Conclusions—

I. Government officials and rulers had to work according to the laws of court.

II. Government officials and rulers work according to the court.

Explanation : The word 'had to' in the first conclusion makes its right conclusion. Conclusion II is extra assumption, therefore, it is not considered.

7. If in conclusion the worlds, like : 'definitely', 'quickly' 'cent-percent', 'only one', 'only forever', 'all', 'always', 'every' etc., are linked then these are not considered. But if the conclusion is direct result of the statement, then it is considered.

Exercise

Directions—In each of the following questions a statement is given, followed by two conclusions. Give answer—

(A) If only conclusion I follows
(B) If only conclusion II follows
(C) If either I or II follows
(D) If neither I nor II follows
(E) If both I and II follows.

1. **Statement**—If you are a good artist, then we have definitely a job for you.
   Conclusions—
   I. You are a good artist.
   II. We are in need of a good artist.

2. **Statement**—Morning walks are good for health.
   Conclusions—
   I. All healthy people go for morning walks.
   II. Evening walks are harmful.

3. **Statement**—In deserts camels are indispensable for people to travel from one place to another.
   Conclusions—
   I. Camels are the only cheapest mode of transport available in deserts.
   II. There are plenty of camels in deserts.

4. **Statement**—Though Radha is very intelligent but she is not popular enough amongst the friend circle.
   Conclusions—
   I. Mere intelligence does not lead to popularity.
   II. People do not like intelligent persons.

5. **Statement**—Any youngman who makes dowry as a condition for marriage discredits himself and dishonours womanhood.
   Conclusions—
   I. Those who take dowry in marriage should be condemned by the society.
   II. Those who do not take dowry in marriage respect womanhood.

6. **Statement**—Vegetable prices are scoring in the market.
   Conclusions—
   I. Vegetables are becoming a rare commodity.
   II. People cannot eat vegetables.

7. **Statement**—People who speak too much against the dowry, are those who had taken it themselves.
   Conclusions—
   I. It is easier said than done.
   II. People have double standards.

8. **Statement**—Jade plant has thick leaves and it requires little water.
   Conclusions—
   I. All plants with thick leaves require little water.
   II. Jade plants may be grown in places where water is not in abundance.

9. **Statement**—This world is neither good nor evil, each man manufactures a world for himself.
   Conclusions—
   I. Some people find this world quite good.
   II. Some people find this world quite bad.

10. **Statement**—Until our country achieves economic equality, political freedom and democracy would be meaningless.
    Conclusions—
    I. Political freedom and democracy go hand in hand.
    II. Economic equality leads to real political freedom and democracy.

11. **Statement**—Water supply in wards A and B of the city will be affected by about 50% on Friday because repairing work of the mainlines is to be carried out.
    Conclusions—
    I. The residents in these wards should economize on water on Friday.
    II. The residents in these wards should store some water on the previous day.

12. **Statement**—Each good dancer is awarded a medal.
    Conclusions—
    I. Kamla should be awarded a medal.
    II. Kamla should not be awarded a medal because she is not a good dancer.

13. **Statement**—State Government has agreed is principle to sanction more number of posts of primary school teachers in rural and urban area to reduce the teacher-students ratio.
    Conclusions—
    I. Student-teacher ratio in urban areas in higher than that of rural areas.
    II. Student-teacher ratio in rural areas is higher than that of urban areas.

14. **Statement**—Doctors have comprehensive knowledge of human structure.
    Conclusions—
    I. Anatomy is one of their subject is curriculum.
    II. Other subjects, also deal with the human structure.

15. **Statement**—The Chief Minister asserted that this government will make full efforts for the upliftment of farmers and rural poor people.

Conclusions—

I. Previous governments had not made serious efforts for uplifting these people.

II. This government will not make full efforts for upliftment of urban people.

16. **Statement**—Physical exercise is necessary for good health.

Conclusions—

I. John plays Tennis at the age of seventy.

II. Men with irregular habits have to go to hospital.

17. **Statement**—If he is intelligent, he will pass the examination.

Conclusions—

I. He will pass the examination.

II. To pass the examination, he must be intelligent.

18. **Statement**—Books without knowledge of life are useless.

Conclusions—

I. All books contain knowledge of life.

II. People should try to gain the knowledge of life.

19. **Statement**—Most of the Indian States existed before independence.

Conclusions—

I. Some Indian States existed before independence.

II. All Indian States did not exist before independence.

20. **Statement**—Modern man influences his destinity by the choice he makes unlike in the past.

Conclusions—

I. Earlier there were less options available to them.

II. There was no desire in the past to influence the destinity.

21. **Statement**—A man must be wise to be a good wrangler. Good wranglers are talkative and boring.

Conclusions—

I. All the wise persons are boring.

II. All the wise persons are good wranglers.

22. **Statement**—A large majority of the work force in India is unorganized. Most of them earn either the minimum or uncertain wages while others are engaged in sundry jobs.

Conclusions—

I. The workers in the organized sector get better facilities and stay longer in their jobs.

II. Some workers in the unorganized sector of the workforce have a regular and fixed income.

23. **Statement**—In India more emphasis should be placed on areas such as agriculture, engineering and technology instead of basic and pure sciences.

Conclusions—

I. India has achieved sufficient progress in basic and pure sciences.

II. In the past, the productivity factor in our economy was neglected.

Directions—In each of the following question a statement is given which is followed by four conclusions. Choose the correct conclusion which follows logically from the given statement.

24. **Statement**—Soldiers serve their country.

Conclusions—

(A) Men generally serve their country.

(B) Those who serve their country are soldiers.

(C) Some men who are soldiers serve their country.

(D) Women do not serve their country because they are not soldiers.

25. **Statement**—Ability is poor man's wealth.

Conclusions—

(A) A poor man is always able.

(B) A poor man has the ability to earn wealth.

(C) A wealthy man is always able.

(D) A poor man can earn wealth if he has ability.

26. **Statement**—In the university examination most of the candidates write in Hindi medium.

Conclusions—

(A) All the candidates who appear in this examination write answers in Hindi.

(B) In this examination no candidate writes answer other than in Hindi.

(C) Some candidates of this examination write in Hindi.

(D) Most of the candidates with Hindi medium appear in this examination.

27. **Statement**—If the number of vehicles moving in a city in 1992 is 2·3 lakhs, in 1993 is 2·41 lakhs, in 1994 is 2·25 lakh, in 1995 is 2·36 lakhs and in 1996 is 2·29 lakhs, what could be your conclusion ?

Conclusions—

(A) Movement of vehicles in that city is steady.

(B) Movement of vehicles is increasing.

(C) The change in number of vehicles is wave like.

(D) Movement of vehicles is decreasing.

28. **Statement**—All the books written by 'X' are text-books, some of them are published by 'Y' publishing company.

Conclusions—

(A) All the books published by 'Y' publishing company have been written by 'X'.

(B) 'Y' publishing company publishes some critical essays written by 'X'.

(C) Some text-books written by 'X' are published by publishers other than 'Y' publishing company.

(D) 'Y' publishing company only publishes text-books.

29. **Statement**—Some college-teachers are not football players.

Conclusions—

(A) Shri Rajan who is a chess-player cannot be a college-teacher.

(B) Some players may be college-teachers.

(C) Any football player is not a college teacher.

(D) Some college-teachers may be football players.

30. **Statement**—During riots community D was wiped out, Mr. X belonging to community D recovered in civil hospital.

Conclusions—

(A) All of community D was not wiped out.

(B) The rest of the community D was wiped out.

(C) Community D had no fighters.

(D) Members of the community D went underground.

31. **Statement**—This is wrong that both A and B are good students.

Conclusions—

(A) Both A and B are bad students.

(B) Either both are bad or one of them is a bad student.

(C) A is bad but B is good.

(D) A is good but B is bad.

32. **Statement**—Most of the students are of outstanding merit.

Conclusions—

(A) There are some students who are below par.

(B) Some of the students are of outstanding merit.

(C) There are no students who are not of outstanding merit.

(D) All students are of outstanding merit.

33. **Statement**—If a person is rich, he has a lot of influence.

Conclusions—

(A) Veer Singh has a lot of influence so he is rich.

(B) Rahul is not rich so he does not have a lot of experience.

(C) Kamla is rich so she has a lot of influence.

(D) Poor people cannot have influence.

Answers with Explanations

1. (B) Conclusion II follows from the statement because in the statement it is given that if you are a good artist then we have definitely a job for you. From this, it is clear that we are in need of a good artist.
2. (D) In the statement it is said that morning walks are good for health. But it does not mean that all the healthy persons go for morning walks. Hence, I does not follow. Also nothing is said about the evening walks in the statement. Thus, II also does not follows.
3. (B) In the statement it is given that in deserts camels are indispensable for people to travel from one place to another. Hence camels are found in large number in deserts. Therefore only conclusion II follows.
4. (A) Though Radha is very intelligent but still she is not popular in her friend circle, from this it is clear that mere intelligence does not lead to popularity. Hence one only I conclusion follows.
5. (E) From the statement both the conclusions follows.
6. (D) Both the conclusions are not related to the statement. Hence, neither I nor II follows.
7. (E) From the statement both the conclusions follows.
8. (B) In the statement only about jade plant is said but not other plants. So I does not follow. Conclusion II follows because jade plant requires title water so it can be grown where water is not in abundance.
9. (E) According to the statement this world is made by man himself. So for some people it is good and some it is bad. So both the conclusions follow.
10. (B) The relation between political freedom and democracy has not mentioned at all in the statement. Hence I does not follow. But according to the statement II follows.
11. (E) Both the conclusions follow because the information has been beforehand. So people should store some water on the previous day and use less water on Friday.
12. (B) Conclusion I does not follow because there is no discussion of the main fact of the statement in it. But conclusion II follows because that it clearly states that Kamla should not be given the medal as she is not a good dancer.
13. (D) Since the state government is willing to sanction more number of posts of primary school teachers in rural and urban areas both. Therefore, from this it does not follow that student-teacher ratio is higher either in rural or urban. It rather indicates that the ratio is higher in both the areas. Hence, neither I nor II follows.
14. (E) The fact of doctors having comprehensive knowledge of human structure implies that anatomy is one of their subjects in curriculum. But at the same time there are other subjects such as surgery and medicine which are also connected with human structure. Hence, both the conclusions follow.
15. (D) The given statement neither states that previous government had not made efforts nor does it mean that this government would not make efforts for uplift of urban people. Hence, neither I and II follows.
16. (D) None of the conclusions follow from the statement. Hence, neither I nor II follows.
17. (B) To pass the examination, intelligence is necessary. Hence, only II conclusion follows.
18. (D) None of the conclusions follows from the statement.
19. (B) According to the statement most of the Indian states existed before independence. It means not all the Indian states existed before independence. Hence, II conclusion is logically valid.
20. (A) Conclusion I is directly related to the statement. Hence, I conclusion is valid, while the conclusion II is not related to the statement so it is not valid.
21. (D) According to the statement, good wranglers are wise men. But it does not mean that all wisemen are good wranglers. Hence, none of the two is valid.

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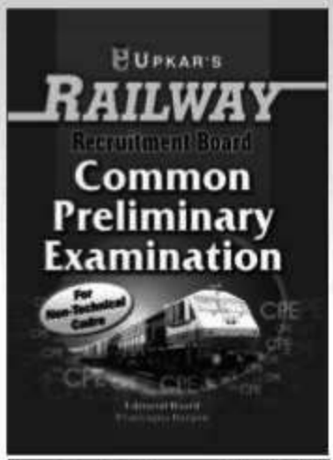

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Statement and Assumptions

An assumption is the hidden part of an argument and it is something taken for granted. It means a fact that can be supposed as considering the contents of the given statement. In these questions, a statement is followed by two or more assumptions. The candidate is required to assess the given statement and decide which of the given assumptions is implicit in the statement ?

Direction—In each question below a statement (or a passage) followed by assumptions numbered I and II. An assumption is something supposed or taken granted. Consider the statement and decide which of the given assumptions is implicit ?

Give Answer—

(A) if only assumption I is implicit.
(B) if only assumption II is implicit.
(C) if either assumption I or II is implicit.
(D) if neither assumption I or II is implicit.
(E) if both the assumptions are implicit.

Example 1.

Statement—The Chairman and the Secretary of the Housing Society have requested society members to use water economically to help society to save water on tax.

Assumptions—

I. Majority of members of society are likely to follow the request.
II. It is desirable to reduce expenditure wherever possible.

Explanation : In assumption I, nothing about the society members to the society's request can be deduced from the statement. So, assumption I is not implicit. But from assumption II, if it is possible the expenditure can be reduced. So, assumption II is implicit.

Example 2.

Statement—We must settle all the payment due to our suppliers within three working days.

Assumptions—

I. We will always have necessary funds in our account to settle the bills.
II. We are capable of verifying and clearing the bills in less than three working days.

Explanation : Since, the statement says for making all payment within three days, it is clear that the company has the necessary funds and the bills can be verified and cleared within the stipulated period. So, both the assumptions I and II are implicit.

Example 3.

Statement—The patient condition would improve after this operation.

Assumptions—

I. The patient can be operated upon this condition.
II. The patient cannot be operated upon this condition.

Explanation : It is very much clear in the statement that the patient is in a position to be operated upon. Hence, assumption I is implicit second assumption is contrast to the I assumption. It will not implicit.

Example 4.

Statement—It is desirable to put the child in school at the age of 5 or so.

Assumptions—

I. At the age the child reaches appropriate level of development and is ready to learn.
II. The schools do not admit children after six years of age.

Explanation : The statement I talks of putting the child in school at the age of 5, it means that the child is mentally prepared for the same at this age. So, assumption I is implicit. But nothing about admission after six years of age is said in the statement. So, assumption II is not implicit.

Example 5.

Statement—As there is a great demand, every person seeking tickets of the programme will be given only five tickets.

Assumptions—

I. The organizers are not keen on selling the tickets.
II. No one is interested in getting more than five tickets.

Explanation : Clearly, the organizers are adopting the policy not to reduce the sale but to cope with great demand in order that everyone get the ticket. So, I is not implicit. Also, due to great demand, the maximum number of tickets one person has been reduced to five. So, II is also not implicit.

Exercise

Directions—In each question below is given a statement followed by two assumptions numbered I and II. An assumption is something supposed or taken for granted. You have to find out from the following assumptions which one is implicit in the satatement.

Give Answer—

(A) if only assumption I is implicit.
(B) if only assumption II is implicit.
(C) if either I or II is implicit.
(D) if neither I nor II is implicit.
(E) if both I and II are implicit.

11. **Statement**—Opening a library in Rambali will be a wastage.

Assumptions—

I. Inhabitants of Rambali are illiterate.
II. Inhabitants of Rambali are not interested in reading.

2. **Statement**—"A car is required on rent"—an advertisement.
Assumptions—
I. All types of vehicles are available on rent.
II. People will respond to the advertisement.

3. **Statement**—A's advice to B—"If you want to study computer, join Institute X".
Assumptions—
I. Institute X provides good computer education.
II. B listen to A's advice.

4. **Statement**—Like a mad man, I decided to follow him.
Assumptions—
I. I am not a mad man.
II. I am a mad man.

5. **Statement**—If it is easy to become an engineer, I don't want to be an engineer.
Assumptions—
I. An individual aspires to be professional.
II. One desires to achieve a thing which is hard earned.

6. **Statement**—All the employees are notified that the organization will provide transport facilities at half the cost from the nearby railway station to the office except those who have been provided with travelling allowance.
Assumptions—
I. Most of the employees will travel by the office transport.
II. Those who are provided with travelling allowance will not read such notice.

7. **Statement**—An advertisement of a Bank "Want to open a bank account ! Just dial our 'room service' and we will come at your doorsteps."
Assumptions—
I. There is a section of people who require such service at their home.
II. Now a days banking has become very competitive.

8. **Statement**—I can take you quickly from Kanpur to Lucknow by my cab but then you must pay me double the normal charges.
Assumptions—
I. Normally, it will take more time to reach Lucknow from Kanpur.
II. People want to reach quickly but they will not pay extra money for it.

9. **Statement**—Patient's condition would improve after this operation.
Assumptions—
I. The patient can be operated upon in this condition.
II. The patient cannot be operated upon in this condition.

10. **Statement**—Even with the increase in the number of sugar factories in India, we still continue to import sugar.
Assumptions—
I. The consumption of sugar per captia has increased in India.
II. Many of the factories are not in a position to produce sugar to their fullest capacity.

11. **Statement**—Unemployed allowance should be given to all unemployed youths above 18 years of age.
Assumptions—
I. There are unemployed youths in India who need monetary support.
II. The government has sufficient funds to provide allowance to all unemployed youth.

12. **Statement**—The leader of main opposition asserted that the call for Chakka jam turned out to be a great success in the entire state.
Assumptions—
I. The people in future will support the main opposition party.
II. People probably are convinced about the reason behind the chakka jam strike call.

13. **Statement**—A sentence in the letter to the candidates called for written exams—you have to bear your expenses on travel etc.
Assumptions—
I. If not clarified, all the candidates may claim reimbursement of expenses.
II. Many organizations reimburse expenses on travel to candidates called to written examination.

14. **Statement**—In case of any difficulty about this case you may contact our company's lawyer.
Assumptions—
I. Each company has lawyer of his own.
II. The company's lawyer is thoroughly briefed about this case.

15. **Statement**—A good executive has to be task oriented as well as people-oriented.
Assumptions—
I. Some executives are people oriented.
II. Some people are not people-oriented.

16. **Statement**—Read this book to get detailed and most comprehensive information on this issue.
Assumptions—
I. The person who wants this information can read.
II. There are other books available on this issue.

17. **Statement**—Why don't you invite Anthony for the Christmas party this year ?
Assumptions—
I. Anthony is not from the same city.
II. Unless invited, Anthony will not attend the party.

18. **Statement**—If you offer peanuts, you get only monkeys.

Assumptions—

I. Money is not a good motivation.

II. Money cannot buy everthing.

19. **Statement**—"Best way to solve this problem of workers dissatisfaction is to offer them cash reward. If this type of incentive can solve the problem in CIDCO company than why not here". A personnel manager tells the Chairman of a company.

Assumptions—

I. The reason for worker's dissatisfaction in both company was similar.

II. Monetary incentives have universal appeal.

20. **Statement**—"We need to appoint more teachers"—Principal informs the school staff.

Assumptions—

I. Teachers are available.

II. Present teachers are not good.

21. **Statement**—A nationalized bank issued an advertisement in the national dailies asking the eligible candidates for applying for 100 posts of chartered accountants.

Assumptions—

I. The eligible chartered accountants may respond to the advertisement.

II. There may be adequate number of eligible chartered accountants who may want to join a nationalized bank.

22. **Statement**—The municipal authority announced before the onset of monsoon that the roads within the city will be free of potholes during monsoon.

Assumptions—

I. The roads were repaired so well that potholes may not reappear.

II. People may not complain even if the potholes reappear.

23. **Statement**—"Our Europe Holiday Package costs less than some of the holiday Packages within the country"—An advertisement by an Indian travel company.

Assumptions—

I. People may prefer to travel to foreign destinations than to the places within the country at comparable cost.

II. People generally take their travel decisions after getting information from such advertisements.

24. **Statement**—The retail vegetable vendors increased the prices of vegetables by about 20 per cent due to non-availability of vegetables at lower prices at the wholesale market.

Assumptions—

I. The customers may totally stop buying vegetables at higher prices.

II. The customers may still buy vegetables from the retail vendors.

25. **Statement**—A large number of students and parents stood in the queue to collect forms for admission to various undergraduate courses in the college.

Assumptions—

I. The college authority may be able to admit all those who stood in the queue.

II. The college authority may have adequate number of forms for all those standing in the queue.

Answers with Explanations

1. (D) None is implicit in the statements. The statement only says that opening a library would be wastage but it does not mention why ? Assumptions I and II are only guessess. It may be possible that opening a library in Rambali is a wastage because there is already a library there.

2. (B) This statement says that a car is required for rent and it does not say that any vehicle is required. So, it cannot be assumed that any vehicle is available for rent. But assumption II clearly implicit. Whenever any advertisement is published, it is assumed that people will respond to the advertisement.

3. (B) Since, 'A' advises 'B' to join institute X to study computer, hence it is assumed that institute X provides good coaching for computer. Secondly, it is also assumed that B listens 'A' advice.

4. (A) In the statement, it is said like a mad man. It means 'not a mad man'. Hence, assumption I is implicit.

5. (B) It is not given in the statement, an individual always aspires to be a professional but we can deduce that the a person desires those things which are hard earned.

6. (D) From the statement, both the assumptions are not implicit.

7. (E) Both the assumptions are implicit. There is a section of people who can be benefitted by such type of service. This type of advertisement has been given by the bank because now-a-days banking has become competitive.

8. (A) The word quickly shows in the statement that normally, it takes more time to reach Lucknow to Kanpur and the cab-drivers promises to save the time. Assumption II does not implicit in the statement.

9. (A) It is very much implied in the statement that the patient is in a position to be operated soon. Hence, assumption I is implicit.

10. (D) Neither of the assumptions is implicit in the statement as there may various reasons for importing sugar.

11. (A) Assumption I says that Indian unemployed youths need monetary support is solid reason for providing allowance to all unemployed youths. However, assumption II that government has sufficient funds does not valid deduction. Hence, only assumption I is implicit.

12. (B) Since, the Chakka jam call was accepted by and large by the entire state. It means that people are

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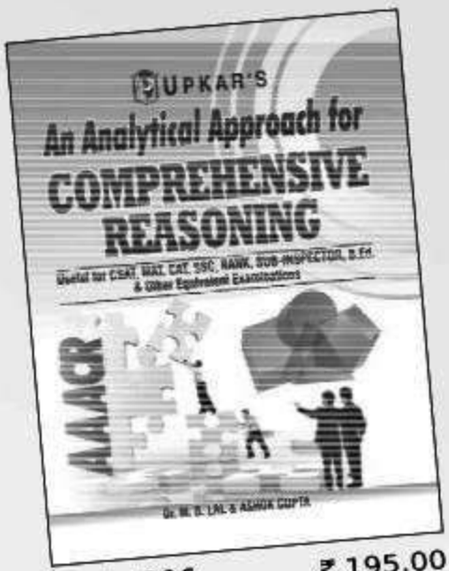

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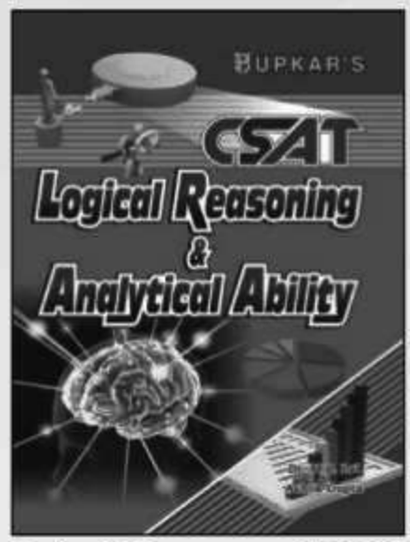

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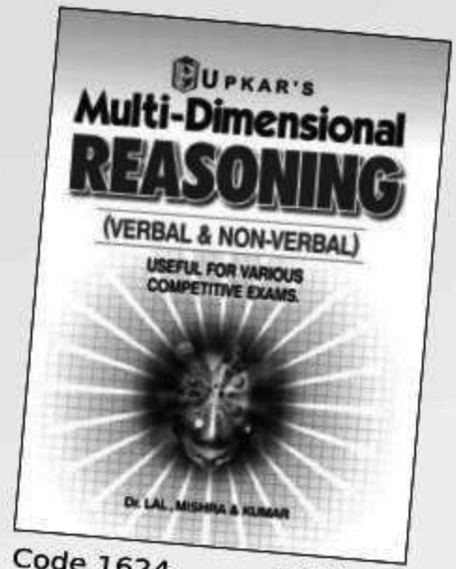

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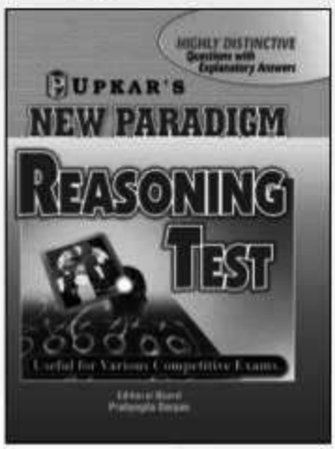

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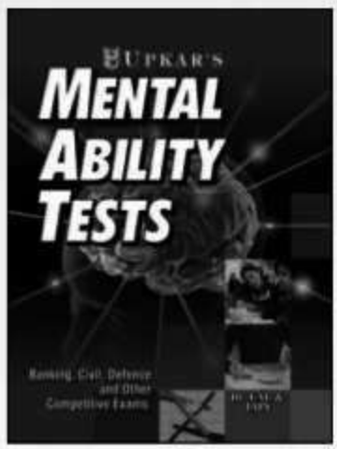

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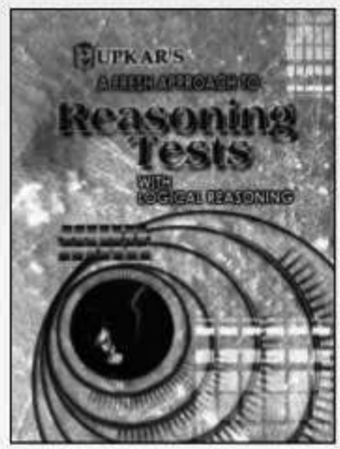

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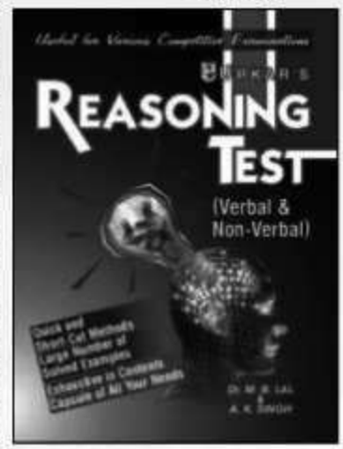

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Statement and Argument

In such type of test, a statement is given which is followed by two arguments. Candidates are required to distinguish between these two arguments and find out which one is strong ?

A argument may be strong in the following conditions—

(1) A strong argument should give the realistic diagnosis of the situation described in the statement.

(2) A strong argument should relate with the statement and be supported up by the facts or established notions.

(3) A strong argument should be guazed by the previous experiences and it can be predicted that the result will follow.

(4) A strong argument should not be mere reiteration of the situation given in the statement.

No argument should be based on emotion, feeling etc., because a weak argument is very simple, superflous, ambiguous and long drawn one.

Example 1.

Statement—Will Suresh get second class in the examination ?

Argument—Yes, he always stands second.

Explanation—He always stands second, it does not mean that he will come second this year also. Hence, we can say that this argument is not strong.

Example 2.

Statement—Are human cultures developing into savage and unsound way ?

Argument—Yes, man is an uncivilized animal.

Explanation—We know that man is a social animal while in this argument, it has been stated against the social belief. Hence, this is a weak argument.

Example 3.

Statement—Should prohibition on alcohol be banned ?

Argument—Yes, Prohibition on alcohol should be banned.

Explanation—This argument is merely repetition of the statement. Hence, this is not a strong argument.

Example 4.

Statement—Should luxary hotels be banned in India ?

Argument—Yes, these are the places from where international criminals operate.

Explanation—The luxury hotels are symbol of country's standard and places for staying the affluent foreign tourists and it is not confirmed that the criminals always stay there. Hence, this is not a strong argument.

Example 5.

Statement—Should State Government ban on Lottery ?

Argument—Yes, to spend money aimlessly is not a proper thing.

Explanation—It is not clear that the money is being spent on lottery or on other things. Hence, it is not a strong argument.

Example 6.

Statement—Should we encourage computerization ?

Argument—Yes, America is also doing this.

Explanation—Any argument cannot be taken with the context of a person, incident of a country or some examples. We cannot compare certain qualities with the other country. Hence, it is not a strong argument.

Example 7.

Statement—Will the political activities go on this year ?

Argument—Yes, many of the newspapers endorse the statement.

Explanation—If the newspaper write this, it does not mean that the political activities will go on. Hence, it is not a strong argument.

Exercise

Directions—(Q. 1–5) In making decisions about important questions, it is desirable to be able to distinguish between 'strong' arguments and 'weak' arguments. 'Strong' arguments must be both important and directly related to the question. 'Weak' arguments may not be directly related to the question and may be of minor importance or may be related to the trivial aspects of the question.

Each question below is followed by two arguments numbered I and II. You have to decide which of the arguments is a 'strong' argument and which is a 'weak' argument.

Give Answer :

(A) If only argument I is strong.

(B) If only argument II is strong.

(C) If either argument I or II is strong.

(D) If neither argument I nor II is strong.

(E) If both arguments I and II are strong.

1. Should the practice of rewarding high scores be stopped to handle frustration among the moderate scores ?

Arguments—

I. No, it is necessary to motivate the high scorers and reward is one of the best ways of motivating.

II. Yes, too much appreciation for high scores affects the moderate students adversely at times leading to extreme situations.

2. Should the Major part of school examinations be made objective type ?

Arguments—

I. No, objective type examination does not test the students' ability to express.

II. Yes, this is the best method of assessing one's ability and knowledge.

3. Should there be a total ban on use of plastic bags ?

Arguments—

I. No, instead the thickness of plastic bags, which can be used without much damage to the environment, should be specified.

II. Yes, use of plastic bags causes various problems like water pollution and water logging and hence it is necessary to ban it.

4. Should the Government service in rural areas at least for two years after completion of graduation be made compulsory for the students of medicine ?

Arguments—

I. Yes, it is everyone's duty to serve the people in rural areas and contribute for their upliftment.

II. No, it cannot be applied only to the medicine students since anyways they are contributing during their studies and particularly in the period of internship.

5. Should all the factories in the cities be shifted to the outskirts, far away from the main city ?

Arguments—

I. Yes, this is an essential step for controlling pollution in the city.

II. No, such a step will lead to lot of inconvenience to the employees of the factories and their families as well.

Directions–(Q. 6–10) In making decisions about important questions, it is desirable to be able to distinguish between 'strong' arguments and 'weak' arguments. 'Strong' arguments are those which are both important and directly related to the question. 'Weak' arguments are those which are of minor importance and also may not be directly related to the question or may be related to a trivial aspect of the question.

Each question below is followed by three arguments **numbered** I, II and III. You have to decide which of the arguments is a 'strong' argument and which is a 'weak' argument.

6. **Statement**—Should the Govt. supply free text books upto Std. X to all the students in the Govt. run schools in India ?

Arguments—

I. No, many students of these schools come from rich families and they should not be given free books.

II. Yes, this will considerably reduce the percentage of school dropouts as many parents cannot afford the burden of buying books.

III. No, the prices of books prescribed upto Std. X are othewise very low and there is no need to distribute books free of cost to the students.

(A) Only I and II are strong
(B) Only II and III are strong
(C) Only I and III are strong
(D) All I, II and III are strong
(E) None of these

7. **Statement**—Should the Govt. privatize all the coal mines in the country ?

Arguments—

I. Yes, this will result in optimum mining as the private companies are in a position to bring in experts from other countries to maximize the output.

II. No, the coal mines are our country's wealth and we should not allow them to go to the private hands.

III. Yes, the coal mines in India are in very bad shape and the Govt. is unable to manage them efficiently.

(A) Only I and III are strong
(B) Only I and II are strong
(C) Only II and III are strong
(D) All I, II and III are strong
(E) None of these

8. **Statement**—Should all the Engineering Graduates passing out of Govt. colleges be compulsorily made to work in Government organizations / public sector undertakings ?

Arguments—

I. Yes, these students have used huge resources of the Govt. and they should pay back by serving in Govt./ public sector undertakings.

II. Yes, otherwise these students will join the multinational companies and earn huge sums of money leading to loss of Govt. resources.

III. No, each individual has a right to choose his/her job and serving in Govt./public sector undertaking should not be made mandatory.

(A) None is strong
(B) Only III is strong
(C) Only I and III are strong
(D) Only either I or III and II are strong
(E) None of these

9. **Statement**—Should the public voting in Reality TV shows be completely banned ?

Arguments—

I. Yes, the public votes can be manipulated by the contestants and the deserving one may not win the contest.

II. No, judges of such shows can be biased and therefore the final verdict should be left to the general public.

III. Yes, people may vote in favour of a contestant for all reasons other than the merit and therefore the public opinion may be biased.

(A) Only either I or II is strong
(B) Only either II or III is strong

(C) Only either I and III or II is/are strong

(D) All I, II and III are strong

(E) None of these

10. **Statement**—Should the Government allow foreign construction companies in setting up of nuclear power plants ?

Arguments—

I. Yes, the foreign construction companies are technically superior than the construction companies in our country and therefore they will be able to build better installations.

II. Yes, we need to construct such facilities with the help of foreign construction companies which has experience of building such installations in a time bound manner to avoid unnecessary delay.

III. No, nuclear power installations are sensitive in nature and are integrated to the safety and security of our country and therefore we should not allow the foreigners to have access to such installations.

(A) All are strong

(B) Only I and II are strong

(C) Only III is strong

(D) Only II is strong

(E) None of these

Answers with Explanations

1. (E) 2. (D) 3. (B)

4. (A) It is the duty of the doctors to serve in rural areas because there is no hospital where the villagers can get their treatment. Hence, I argument is strong. The second argument is of no importance so it is weak.

5. (C)

6. (A) Only I and II are strong. In Govt. schools many students come from rich families so there is no need to distribute books free of cost. Many students come to these schools from poor families and they cannot afford to buy books so they should be given. But III is strong because the books may be costly or not but there will be some expenditure.

7. (A) Since Private Companies will give optimum mining, so I argument is strong. As the Governments is unable to manage them efficiently then it is better to give in the hands private organization. Hence, III argument is strong. II is weak because when Govt. is unable to manage properly so it is good to keep under Govt.

8. (B) The Govt. has given huge resources during their study time but has charged feed. So their is no obligation of the Govt. to the student. Hence, I is not strong. II is also not strong because it depends upon the choice of the student to serve anywhere. But III is strong because it depends entirely upon the choice of the student.

9. (E) Only II and III arguments are strong because judges can be biased. Hence the final verdict should be left to the general public. Also the people may vote in favour of a contestant for all reasons other. Hence the public opinion may be biased. But I is weak because it has no importance.

10. (C) Only III argument is strong because nuclear power installations are sensitive in nature and are integrated to the safety and security of our country so it is not good to handover the setting up of nuclear power plants to foreign construction companies. Argument I and II are of no importance.

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22. (B) Nothing is said in the statement about the worker in the organized sector. So, I conclusion is not valid. But it is said in the statement that some workers in the unorganized sector are engaged in sundry jobs. Hence, II conclusion is valid.

23. (B) I conclusion is not related to the statement. So, I conclusion is valid. But II conclusion is valid because it implies that in the past the productivity factor in our economy was neglected.

24. (C) Only (C) conclusion follows because according to statement soldiers serve their country. Hence, some men who are soldiers serve their country is correct.

25. (D) Only (D) conclusion follows because if a poor man is able he can earn wealth that is why poor man's ability is his wealth.

26. (D) Only (D) conclusion follows the statement because in this examination most of the candidates appear with Hindi medium so they write in Hindi medium.

27. (C) The number of vehicles moving in a city is increasing, then decreasing, again increasing and so on. Hence, the change in number of vehicles is wave like.

28. (C) Only (C) conclusion follows from the statement because some of the text-books written by 'X' are published by 'Y' publishing company so the rest of the others have been published by some other publishers.

29. (D) Since some college-teachers are not football players, therefore rest of the other college-teachers may be football players.

30. (A) As Mr. X belonging to community D, was alive, therefore, all of community D was not wiped out.

31. (B) It is wrong that both A and B are good students. It means either both are bad or one of them is a bad student.

32. (A) Most of the students one of outstanding merit—it means all of the students are not of outstanding merit. Some of them are below par.

33. (C) If a person is rich, he has a lot of influence. Since Kamla is rich so she should have a lot of influence.

●●●

Decision Making

This chapter deals with questions in which you have to decide upon the course of action to be taken upon a candidate who has applied for a vacancy or allotment or membership to an institution. It is an indispensable process in one's personal and official life. A decision is the final outcome of the process of evaluating and analysing the given data. Systematic analysis of facts and figures reduces the chances of inaccuracy and ensures speedy decision-making. Students are required to match personal data of a candidate with the conditions given to select him/her to the job or admission. The decision about each candidate has to be made from amongst the five choices named (a), (b), (c), (d) and (e) which state the courses of action to be taken as per the candidate's potentials.

Exercise 1

Directions—(Q. 1–10) Study the following information carefully and answer the questions given below—

Following are the conditions for selecting Assistant General Manager-HR in an organization.

The candidate must—

I. Be at least 40 years and not more than 50 years old as on 1.5.2010.

II. Be post graduate in Personnel Management/HR with at least 60 per cent marks.

III. Have post qualification work experience of at least fifteen years out of which at least five years as Senior Manager-HR in an organization.

IV. Have successfully implemented HR system in his/her organization some time during the past three years.

V. Have secured at least 45 per cent marks in the selection process.

In the case of a candidate who satisfies all the conditions **except** at—

(a) At (II) above but has secured at least 50 per cent marks in post-graduation and at least 65 per cent marks in the selection process, the case is to be referred to Executive Director.

(b) At (III) above but has at least twelve years post qualification work experience out of which at least eight years as Senior Manager-HR in an organization, the case is to be referred to Chairman.

In each question below details of one candidate are given. You have to take one of the courses of action based on the information provided and the conditions and sub-conditions given above and mark the number of that course of action as your answer. You are not to assume anything other than the information provided in each question. All these cases are given to you as on 1.5.2010.

Mark Answer :

(A) If the candidate is to be selected

(B) If the candidate is not to be selected

(C) If the data provided are not adequate to take a decision

(D) If the case is to be referred to Executive Director

(E) If the case is to be referred to Chairman.

1. Pranab Ghosh was born on 8th March 1968. He has been working for the past eighteen years in an organization out of which last seven years as Senior Manager-HR after completing his post-graduation in HR with 68 per cent marks. He had successfully implemented HR System last year in his organization. He has secured 50 per cent marks in the selection process.

2. Sheetal Jha has been working in an organization for the past twenty years out of which ten years as Senior Manager-HR after completing her post-graduation in Personnel Management with 70 per cent marks. She was born on 2nd December 1965. She has secured 45 per cent marks in the selection process.

3. Prabir Sengupta was born on 8th May, 1963. He has secured 65 per cent marks in the selection process. He has been working for the past fifteen years in an organization out of which twelve years as Senior Manager-HR after completing his post-graduation in HR with 55 per cent marks. He has successfully implemented HR system in his organization during the last two years.

4. Shailesh Kumar has been working in an organization for the past thirteen years out of which nine years as Senior Manager-HR after completing his Post graduation in HR with 68 per cent marks. He was born on September 15, 1968. He has secured 48 per cent marks in the selection process. He has successfully implemented HR-System in his organization two years back.

5. Navin Chopra was born on 12 June, 1967. He has been working for the past sixteen years out of which seven years as Senior Manager-HR after completing his post-graduation in Personnel Management with 75 per cent marks. He has secured 44 per cent marks in the selection process. He has successfully implemented HR-System in his organization last year.

6. Meera Kulkarni has been working for the past seventeen years out of which eight years as Senior Manager-HR after completing her post-graduation in Personnel Management with 66 per cent marks. She has successfully implemented HR-System in her organization during the last two years. She has secured 49 per cent marks in the selection process. She was born on December 14, 1971.

7. Akash Shastri was born on April 12, 1967. He has been working for the past sixteen years out of which six years as Senior Manager-HR in an organization after completing his post-graduation in HR with 58 per cent marks. He has successfully implemented HR-System in his organization last year. He has secured 65 per cent marks in the selection process.
8. Shekhar Jena has been working for the past fifteen years out of which last seven years as Senior Manager-HR in an organization after completing his post-graduation in HR with 68 per cent marks. He has secured 60 per cent marks in the selection process. He was born on August 16, 1965. He has successfully implemented HR-System in his organization in past three years.
9. Suneeta Govil was born on April 5, 1964. She has been working for the past seventeen years out of which nine years as Senior Manager-HR in an organization. She has secured 48 per cent marks in the selection process. She has also secured 69 per cent marks in post-graduation in Personnel Management. She has successfully implemented HR-System in her organization last year.
10. Mohit Saxena was born on July 27, 1963. He has been working for the past thirteen years out of which nine years as Senior Manager-HR after completing his post-graduation in HR with 67 per cent marks. He has secured 49 per cent marks in the Selection process. He has successfully implemented HR-System in his organization during the past three years.

Exercise 2

Directions—(Q. 1–10) Study the following information carefully and answer the questions given below—

An organization wants to recruit System Analysts. The following conditions apply.

The candidate must—

I. Be an engineering graduate in Computer/IT with at least 60% marks.

II. Have working experience in the field of Computer atleast for 2 years after acquiring the requisite qualification.

III. Have completed minimum 25 years and maximum 30 years of age as on 1.12.2005.

IV. Be willing to sign a bond for Rs. 50,000.

V. Have secured minimum 55% marks in selection test.

However, if a candidate fulfils all other conditions **except**—

(a) At (I) above, but is an Electronics Engineer with 65% or more marks the case is to be referred to the General Manage (GM)–IT.

(b) At (IV) above, but has an experience of atleast 5 years as a Software Manager, the case is to be referred to the VP.

In each question below, detailed information of candidate is given. You have to carefully study the information provided in each case and take one of the following courses of actions based on the information and the conditions given above. You are not to assume anything other than the information provided in each question. All these cases are given to you as on 01.12.2005. You have to indicate your decision by marking answers to each question as follows :

Mark Answer :

(A) If the case is to be referred to VP.

(B) If the case is to be referred to GM.

(C) If the data provided is not sufficient to take a decision.

(D) If the candidate is to be selected.

(E) If the candidate is not to be selected.

1. Giridhar is working as a Software Engineer in a reputed company for past 4 years after completing Computer Engineering with 68% marks. He has cleared the selection test with 75% marks and is willing to sign the bond. His date of birth is 17th December, 1978.
2. Ms. Suneeta is an IT Engineer with 60% marks at graduation as well as in selection test. She is working as a Software Engineer for last 3 years after completing engineering degree and has completed 27 years of age. She is willing to sign the bond of Rs. 50,000.
3. Nikita has just completed 26 years of age. She has passed IT Engineering examination in 2002 with 66% marks and is working as a Sr. Programmer since then. She has no problem in signing the bond of Rs. 50,000. She has secured 53% marks in selection test.
4. Rakesh Rao is a Computer Engineer Graduate and thereafter is working as a Software Manager for past 6 years. He has secured 72% marks at graduation and 67% marks in selection test. His date of birth is 5th December 1976. He is not willing to sign the bond for Rs. 50,000.
5. Ramkumar is an Engineering Graduate in Computers with 78% marks passed out in 1999 at the age of 23 years. Since then he is working as a Software Manager in an Engineering firm. He doesn't want to sign the bond for Rs. 50,000. He has cleared the selection test with 72% marks.
6. Abhijit is a Computer Engineer with 65% marks passed out in 2001 at the age of 22 years. Since then he is working as a Software Engineer, in a Private firm. He is willing to sign the bond for the required amount. He has secured 63% marks in selection test.
7. Mr. Rajan is working as a Programmer for the last 6 years in an Engineering firm after passing engineering examination. He has passed Electronics Engineering with 76% marks. His date of birth is 16.05.78. He has cleared the selection test with 62% marks and is willing to sign the bond for Rs. 50,000.
8. Nishant is an Electronics Engineer passed out in June 2002 at the age of 22 years. Since then he is working as a Programmer in a software company. He has passed the selection test with 66% marks and is willing to sign the bond.

9. Kalyani is an engineer with 72% marks in Telecommunication. She has just completed 27 years of age. She has cleared the selection test with 59% marks. She is willing to sign the bond.
10. Sangita is an IT Engineer and is working as an EDP Officer in a bank for past 5 years. She has completed 28 years of age and is willing to sign the bond of Rs. 50,0000. She has obtained 65% marks in the selection test.

Directions—(Q. 11–20) For recruiting Management Trainees in an organization, the following criteria have been laid down. The candidate must—

I. Be a first class graduate in commerce with at least 65% marks.
II. Have secured at least 70% marks in SSC.
III. Be not more than 26 years and not less than 21 years of age as on 1-8-2007.
IV. Have secured at least 60% marks in selection test.
V. Have secured at least 50% marks in selection interview.

However, if a candidate fulfils all the above-mentioned criteria except—

(a) At (I) above but is an Economics graduate with at least 70% marks, the case may be referred to the GM of the organization.
(b) At (V) above but has secured at least 40% marks in selection interview and at least 70% marks in selection test, the case may be referred to the President of the Organization.

In each of the questions below, information of one candidate is given. You have to take one of the following five decisions based on the information provided and the criteria and conditions given above. You are not to assume anything other than the information provided in each question. All these cases are given to you as on 1-8-2007. You have to indicate your decision by marking answers to each question as follows.

Mark Answer :

(A) If the candidate is to be selected.
(B) If the candidate is not to be selected.
(C) If the case is to be referred to GM.
(D) If the case is to be referred to President.
(E) If the data is inadequate to decide the course of action.

11. Rashmi is B. Com. in first class with 62% marks and M. Com. also in first with 67% marks. Her marks in SSC were 85%. She has completed 24 years of age on 3rd October, 2006. She has scored 66% marks in selection test and 56% marks in interview.
12. Sarita Dere is post-graduate in Commerce passed in first class with 62% marks. Her score in SSC was 75%. She has completed 23 years of age on 23rd December, 2006. She has scored 64% marks in selection test and 55% marks in selection interview.
13. Ashish Gharpure is a Commerce graduate passed out in June 2006, at the age of 21 years with 72% marks and first class. Presently he is pursuing his post-graduation in Economics. He had scored 82% marks in SSC. He has cleared the selection test with 67% marks and selection interview with 56% marks.
14. Sharad Bhatia has passed B. Com. in first class with 69% marks and SSC with 78% marks. He has joined a private organization as an Officer in June 2005 immediately after completing 23 years of age. He has scored 65% marks in selection test and 48% marks in selection interview.
15. Priyanka Ghate has passed graduation in Arts with specialization in Economics in first class with 75% marks. Her date of birth is 8-7-1985. She had scored 89% marks in SSC, 63% in selection interview and 61% marks in selection test.
16. Abhishek has passed degree examination in Commerce with Economics as one of the subjects in first class with 68% marks in 2006 at the age of 22 years. His marks in SSC were 73%. He has cleared the selection test with 64% marks and selection interview with 62% marks.
17. Rakesh has passed SSC with 85% marks and graduation in Arts with specialization in Economics with 72% marks. His date of birth is 12-6-1985. He has scored 65% marks in selection test as well as in interview.
18. Radhika has passed B.A. examination with specialization in Economics securing 76% marks and first class. She had topped her class in SSC examination with 82% marks. She has completed 24 years of age on 25th May, 2007. She has cleared the selection test with 66% marks and the selection interview with 54% marks.
19. Ashwini is a B. Com. passed in first class with 68% marks. She had scored 75% marks in SSC. Her date of birth is 14-9-1984. She had cleared the selection test with 74% marks and selection interview with 45% marks.
20. Rajesh is a graduate and post-graduate in Commerce and has passed both these examination in first class. He had scored 75% marks in SSC. He has completed 23 years of age on 23rd June, 2007. He has scored 65% marks in interview as well as selection test.

Directions—(Q. 21 to 28) For recruiting Agriculture officers in an organization, the following conditions apply. The candidate must—

I. Be an agriculture graduate with atleast 65% marks.
II. Clear the selection test with at least 50% marks.
III. Secure atleast 45% marks in interview.
IV. Be born on or after 1.11.1975 but not after 1.11.1984.
V. Be willing to work in rural area.

If the candidate satisfies all the above mentioned conditions **except**—

(a) At (I) above but has passed post-graduation in agriculture, the case may be referred to the Vice-President.
(b) At (III) above but has secured 60% or more marks in selection test and has secured at least 40% marks in interview, the case may be referred to the Chief General Manager.

In each question below, detailed information of one candidate is provided. You have to read the information provided carefully and decide which of the following courses of actions you will adopt as regarding status of the candidate based on the conditions stated above. You are not to assume anything other than the information provided in each question. All these cases are given as on 1.11.2005. Study the information of candidate in each question and decide the course of action. Give the answer—

(A) if the candidate is to be selected.
(B) if the case is to be referred to the Vice-President.
(C) if the case is to be referred to the Chief General Manager.
(D) if the candidate is not to be selected.
(E) if the information in the question is not adequate to take the decision.

21. Sahil has passed B.Sc. Agriculture in 2003 at the age of 21 years with 68% marks. He is doing post-graduation in agriculture and will complete in May 2006. He has secured 58% marks in Selection test and has secured 50% marks in interview. He is willing to work in rural area.
22. Milind is an agriculture graduate with 70% marks. His date of birth is 11.7.1984. He scored 68% marks in Selection test and 42% marks in interview. He is willing to work in rural area.
23. Pravin is a post-graduate in agriculture with 58% marks. He is working for last 2 years after completing post-graduation at the age of 25 years. He had scored 56% marks at graduation in agriculture. He secured 60% marks in Selection test and 52% marks in interview. He is willing to work in rural area.
24. Nikhil, a young boy of 22 years has just passed B.Sc. Agriculture with 78% marks. He is a resident of a village in rural area of Maharashtra state and would like to live in rural area in future as well. He cleared the Selection test with 66% marks and interview with 58% marks.
25. Raj Barua is working as an agriculture officer for past three years after completing B.Sc. Agriculture with 62% marks at the age of 23 years. He has cleared the Selection test with 48% marks and interview with 47% marks. He is willing to work in rural area.
26. Avinash is 24 years of age and has passed graduation and post-graduation in agriculture with 67% and 69% marks respectively. He has secured 70% marks in Selection test and 42% marks in interview.
27. Ramesh is an Agri graduate with 60% marks and has just completed post-graduation in agriculture with 56% marks. He has secured 62% and 58% marks in Selection test and interview. His date of birth is 26.4.1982. He has no problem in working in urban or rural area.
28. Rajesh is an agriculture graduate with 75% marks passed out in 1996 at the age of 22 years. Thereafter he is working for last 7 years as agriculture assistant. He has secured more than 55% marks in Selection test as well as interview. He prefers to work in rural area.

Directions—(Q. 29–33) An organization wants to recruit Manager—HRD for its Mumbai division. The following criteria have been laid down, to be eligible for selection. The candidate must—

I. Be a graduate in any discipline passed in first class with minimum 60% marks
II. Have done post graduate degree/diploma in HRD or personnel management with minimum 65% marks
III. Have cleared the selection test with minimum 50% marks
IV. Have cleared the interview with minimum 45% marks
V. Be not less than 21 years and not more than 28 years of age as on 1.2.2007.

However, if a candidate satisfies all other criteria **except** for—

(a) At (II) above but has got-at-least two years post-qualification experience of working in HRD department case may be referred to the Chairman of the organization.
(b) At (III) above but has secured minimum 45% marks in selection test and 55% marks in interview the case may be referred to the President of the organization.

In each of the questions below, information of one candidate is given. You have to take one of the following five decisions based on the information provided and the criteria and conditions given above. You are not to assume anything other than the information provided in each question. All these cases are given to you as on 1.2.2007. You have to indicate your decision by marking answers to each question as follows. Give answer—

(A) If the candidate is to be selected
(B) If the candidate is not to be selected
(C) If the case is to be referred to Chairman
(D) If the case is to be referred to President
(E) If the data provided is not adequate to decide the course of action

29. Nalini Zaveri has done her graduation in Arts in first class with 60% marks and post-graduate management diploma in HRD with 62% marks. Her date of birth is 16.1.1981. She has been working in the HRD department of a bank for past three years after completing her post-graduation diploma in HRD. She has secured 55% marks in selection test and 50% marks in interview.
30. Rajesh Nalawade is a B. Sc. in first class with 75% marks and post-graduate in personnel management with 60% marks. He is working as an Officer in administration department of an organization for past two years. He has secured 55% marks in selection test and 52% marks in interview. He has completed 26 years of age in November 2006.
31. Shyam Bansode has passed B. Com. in first class with 65% marks and MBA in personnel management with 72% marks. He has cleared the selection test with 58% marks and interview with 52% marks. His date of birth is 17.5.1983.

32. Nikhil Agnihotri is a post-graduate in personnel management passed out in 2005 at the age of 24 years securing 71% marks. He has secured 62% marks in selection test and 57% marks in interview.
33. Sujata Shirke has passed out B. Com. in first class with 62% marks in 2003 at the age of 21 years. Thereafter she has done MBA with specialization in HRD with 72% marks. She has secured 48% marks in selection test and 58% marks in interview.

Answers with Explanations

Exercise 1

1. (A) Pranab Ghosh fulfils all the conditions so he is to be selected.
2. (C) Nothing is said for Sheetal Jha about the condition IV. So the data provided are not adequate to take a decision.
3. (D) Prabir Sengupta does not satisfy the condition II but he fulfils the condition (a). So his case is to be referred to Executive Director.
4. (E) Shailesh Kumar does not satisfy the condition III but he fulfils the condition (b). So his case is to be referred to Chairman.
5. (B) Navin Chopra does not satisfy the condition V. Hence he is not to be selected.
6. (B) Meera Kulkarni is younger than 40 years. Hence she is not to be selected.
7. (D) Akash Shastri does not satisfy the condition II but he fulfils the condition (a). So his case is to be referred to Executive Director.
8. (A) Shekhar Jena fulfils all the conditions so he is to be selected.
9. (A) Suneeta Govil fulfils all the conditions so she is to be selected.
10. (E) Mohit Saxena does not satisfy the condition III but he fulfils the condition (b). So his case is to be referred to Chairman.

Exercise 2

1. (D) As Giridhar fulfils all the conditions so he is to be selected.
2. (D) Sunita fulfils all the conditions so she is to be selected.
3. (E) As Nikita does not fulfil the condition V. So she is not be selected.
4. (A) Rakesh Rao fulfils all the conditions except (IV) and he has an experience as manager of software of more than 5 years, so his case is to be referred to V.P.
5. (A) Ram Kumar fulfils all the conditions except (IV) and he has an experience as a soft manager, of more than 5 years so his case is to be referred to VP.
6. (D) Abhijit fulfils all the conditions so he is to be selected.
7. (B) Rajan fulfils all the conditions except (I) and he has passed Electronics Engeenering with 76% marks. So according to (a) his case to be referred to GM.
8. (C) Marks obtained in Electronics Engineering are not known so the data provided in not sufficient to take a decision.
9. (E) As she does not fulfil the condition (I). So she cannot be selected.
10. (C) As she does not clear the condition (I). So data is not sufficient.
11. (B) Rashmi does not fulfil the condition (I) so she is not to be selected.
12. (E) There is no information of Sarita Dere's about her graduation. Hence data is inadequate to decide the course of action.
13. (A) Ashish Gharpure fulfils all the condition. Hence he is to be selected.
14. (B) Sharad Bhatia does not fulfil the condition (V). Hence he is not to be selected.
15. (C) Priyanka Ghate does not fulfil the condition (I). She is graduate in Arts but not in Commerce. Hence according to (a) her case is to be referred to GM.
16. (A) Abhishek fulfils all the conditions. So he is to be selected.
17. (C) Rakesh does not fulfil the condition (I). He is graduate in Arts but not in Commerce. Hence according to (a) his case is to be referred to GM.
18. (C) Radhika does not fulfil the condition (I). She is graduate in Arts but not in Commerce. Hence according to (a) her case is to be referred to GM.
19. (D) Ashwini does not fulfil the condition (V). Hence according to (b) her case will be referred to the President.
20. (E) The marks obtained by Rajesh in graduation are not given. Hence, the data is inadequate to decide the course of action.
21. (A) Sahil satisfies all the conditions, hence he is to be selected.
22. (C) Milind does not satisfy the condition (III). But according to (b) his case is to be referred to the Chief-General Manager.
23. (B) Pravin does not satisfy the condition (I) but according to (a) his case is to be referred to the Vice-President.
24. (A) Nikhil satisfies all the conditions so he is to be selected.
25. (D) Raj Barua does not satisfy the conditions (I) and (II). So he is not to be selected.
26. (E) Information in the question is not adequate to take decision.
27. (B) Ramesh does not satisfy the condition (I) but according to (a) his case is to be referred to the Vice-President.
28. (D) Rajesh does not satisfy the condition (IV) so he is not to be selected.
29. (C)
30. (B) Rajesh Nalawade does not satisfy (II) condition. Hence he is not to be selected.
31. (A) Shyam Bansode satisfies all the criteria. Hence he is to be selected.
32. (E) Nothing is mentioned about the graduation of Nikhil Agnihotri.
33. (D) Sujata Shirke satisfies all the criteria except (III) and according to (II) his case is to be referred to President.

Cause and Effect

This types of question are frequently asked these days usually. In such type of questions the candidates are asked to determine whether a given event is the cause or the effect of some other event. These questions are to ascertain the analytical and logical reasoning ability of the aspirants.

Relation between cause and effect—Every event happens because it has a cause behind it. This cause is the condition under which any event happens.

In our day to day life we may come across many situations which are more subjective and require an initiative skill. It is not necessary all the time can a cause be so scientifically accurate and precise. Thus, we can say that a necessary condition for the occurrence of a specific event is a circumstance in whose absence for event can not occur or a necessary condition for occurrence of a specific event is a circumstance in whose presence the event must occur.

Example :

Directions—(Q. 1–5) Below in each question is given two statements I and II. These statements may be either independent causes or may be effects of independent causes or a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choices correctly depicts the relationship between these two statements.

Mark Answer—

(A) If statement I is the cause and statement II is its effect.

(B) If statement II is the cause and statement I is effect.

(C) If both the statements I and II are independent causes.

(D) If both the statements I and II are effects of independent causes.

(E) If both the statements I and II are effects of some common cause.

1. I. This year, the cut off percentage for admission to junior colleges have increased over the last year.
   II. This year performance of students in Xth final exam was considerably higher than that of the previous year.
2. I. The conditions of most of the national highways are very bad.
   II. Govt. has now sanctioned a huge amount of money to maintain the national highways.
3. I. Many students of the local school have failed in English Language paper in the annual examination.
   II. Many students of the local school have failed in Mathematics paper in the annual examination.
4. I. Rain and thunder showers bashed the city during the past three days.
   II. Many people stayed indoor during the past three days.
5. I. There has been a considerable increase in the sale of fat free food articles.
   II. Now, people have become more conscious about their health condition and food habits.

Answer with Explanation :

1. (D) Both the statements are effects of independent causes they do not have any relation between them.
2. (A) In the I statement, the cause is given and in II statement, the effect it is given.
3. (E) There may be a common cause for both the statements.
4. (A) II is effect of the I statement. It is only reason that many people stayed indoor during the past three days.
5. (B) Statement II is the cause and Statement I shows the effect. It is clearly mentioned in Statement I that there has been a considerable increase in the sale of fat free food article.

Exercise 1

Directions—(Q. 1–5) Below in each question are given two statements (I) and (II). These statements may be either independent causes or may be effects of independent causes or a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choice correctly depicts the relationship between these two statements. Now, mark your answer as—

(A) If statement (I) is the cause and statement (II) is its effect.

(B) If statement (II) is the cause and statement (I) is its effect.

(C) If both the statements (I) and (II) are independent causes.

(D) If both the statements (I) and (II) are effect independent causes.

(E) If both the statements (I) and (II) are effects of some common cause.

1. **Statements—**
   I. Majority of the residents of the housing society participated in the dinner hosted by one of the members of the society.
   II. Most of the people living in the housing society invite other members for the functions at their house.

2. **Statements**—
   I. Many shops in the locality remained closed throughout the day.
   II. Many offices in the locality closed during the day.

3. **Statements**—
   I. The school authority has decided to increase tuition fees by 30 per cent from the next academic year.
   II. The Govt. has urged the local public to enroll all their children to schools in the area.

4. **Statements**—
   I. The train services in the suburban areas of the city were disrupted for four hours.
   II. The overhead electrical wire snapped between two stations in suburban area of the city.

5. **Statements**—
   I. A recent tiger census in the tiger reserve in the state has reported significant reduction over the last census.
   II. The Govt. has initiated an enquiry to ascertain the facts relating the tiger population in the state.

Directions—(Q. 6–10) Below in each question are given two statements (I) and (II). These statements may be either independent causes or may be effects of independent causes or a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choice correctly depicts the relationship between these two statements.

Mark Answer—
(A) If statement (I) is the cause and statement (II) is its effect.
(B) If statement (II) is the cause and statement (I) is its effect.
(C) If both the statements (I) and (II) are independent causes.
(D) If both the statements (I) and (II) are effects of independent causes.
(E) If both the statements (I) and (II) are effects of some common cause.

6. I. Government of state 'X' imposed a higher sales tax on petroleum products compared to the neighbouring states.
   II. All the petrol pumps in the state observed 'bandh' in protest.

7. I. Attendance for the All India examination held in July 2006 was poor at all the centres.
   II. Western States of the country were affected by heavy floods during July 2006.

8. I. High Court has declared stay on construction of residential buildings on the land under dispute.
   II. A large number of middle class salaries people had booked flats in the buildings under dispute.

9. I. Residents in the locality have now decided to launch a cleanlines drive.
   II. Civic authorities in the city have recorded many cases of Cholera and gastro.

10. I. Senior citizens of the city have complained about the late night disturbance caused due to loudspeakers used during festivals.
    II. Though, the Government has issued a directive banning late night celebrations involving use of loudspeakers, it is not being strictly followed in some of the areas.

Directions—(Q. 11–15) Below in each question are given two statements I and II. These statements may be either independent causes or may be effects of independent causes or a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choice correctly depicts the relationship between these two statements.

Mark Answer—
(A) If statement (I) is the cause and statement (II) is its effect.
(B) If statement (II) is the cause and statement (I) is its effect.
(C) If both the statements (I) and (II) are independent causes.
(D) If both the statements (I) and (II) are effects of independent causes.
(E) If both the statements (I) and (II) are effects of some common cause.

11. I. Many people in the area are reported to be suffering from Malaria.
    II. Private Medical Practitioners in the area have decided to close their clinics for few days.

12. I. The State Govt. has announced special tax package for the new industries to be set up in the state.
    II. Last year the State Govt. had hiked the taxes for all industrial activities in the State.

13. I. The vegatable prices in the local market have increased manifold during the past few days.
    II. Incessant rains have created flood like situation in most rural parts of the state.

14. I. Police authority has recently increased vigil during the evening hours in the locality.
    II. There has been considerable reduction in the incidents of petty crimes in the locality.

15. I. There was a huge rush of people to the temple last Sunday the 15th of the month.
    II. The temple authority had decided to close down the temple for repairs from 17th of the month.

Directions—(Q. 16–20) Below in each question are given two statements (I) and (II). These statements may be either independent causes or may be effects of independent causes or a common cause. One of these statements may be the effect of the other statement. Read both

the statements and decide which of the following answer choice correctly depicts the relationship between these two statements.

Mark Answer—

(A) If statement (I) is the cause and statement (II) is its effect.

(B) If statement (II) is the cause and statement (I) is its effect.

(C) If both the statements (I) and (II) are independent causes.

(D) If both the statements (I) and (II) are effects of independent causes.

(E) If both the statements (I) and (II) are effects of some common cause.

16. I. The health department has advised people to drink boiled and filtered water and maintain hygiene during the monsoon.
    II. The health department has instructed the civic hospitals to equip themselves with adequate stock of medicines during monsoon.

17. I. The State Education Board has decided to do away with preparing merit lists for SSC and HSC examinations.
    II. A large number of students scored very high marks in the recently held SSC examination.

18. I. The State Government decided to grant permission for opening more junior colleges in the state.
    II. Percentage of qualified students in SSC examination was higher this year compared to the past few years.

19. I. The Government has made it compulsory to wear a helmet for riders of the two wheelers.
    II. The number of cases of road accidents involving two wheelers has been increasing every year.

20. I. Increase in rainfall and rising flood situations are regular phenomena for past few years.
    II. People avoid going out in heavy rains.

Directions—(Q. 21–25) Below in each question are given two statements (I) and (II). These statements may be either independent causes or may be effects of independent causes or a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choice correctly depicts the relationship between these two statements.

Mark answer—

(A) If statement (I) is the cause and statement (II) is its effect.

(B) If statement (II) is the cause and statement (I) is its effect.

(C) If both the statements (I) and (II) are independent causes.

(D) If both the statements (I) and (II) are effects of independent causes.

(E) If both the statements (I) and (II) are effects of some common cause.

21. I. Government of state 'X' imposed a higher sales tax on petroleum products compared to the neighbouring states.
    II. All the petrol pumps in the state observed 'bandh' in protest.

22. I. Attendance for the All India examination held in July 2006 was poor at all the centres.
    II. Western States of the country were affected by heavy floods during July 2006.

23. I. High Court has declared stay on construction of residential buildings on the land under dispute.
    II. A large number of middle class salaries people had booked flats in the buildings under dispute.

24. I. Residents in the locality have now decided to launch a cleanliness drive.
    II. Civic authorities in the city have recorded many cases of Cholera and gastro.

25. I. Senior citizens of the city have complained about the late night disturbance caused due to loudspeakers used during festivals.
    II. Though, the Government has issued a directive banning late night celebrations involving use of loudspeakers, it is not being strictly followed in some of the areas.

Exercise 2

1. **Cause**—All the major rivers in the state have been flowing way over the danger level for the past few weeks.

   Which of the following is / are possible effect(s) of the above cause ?

   (1) Many villages situated near the riverbanks are submerged forcing residents to flee.

   (2) Govt. has decided to provide alternate shelter to all the affected villagers residing near the river banks.

   (3) The entire state has been put on high flood alert.

   (A) Only (1) (B) Only (1) and (2)
   (C) Only (2) and (3) (D) All (1), (2) and (3)
   (E) None of these

2. **Effect**—This year majority of the final year students of the management institute have opted for finance specialization.

   Which of the following can be a probable cause of the above effect ?

   (A) Last year most of the students with HR specialization got better job offers than other specializations.

   (B) The management instiute offers only finance specialization to its final year students.

   (C) Last year the students with finance specialization bagged most of the lucrative offers vis-a-vis students with other specializations.

   (D) The management institute has recently started its finance specialization in addition to Marketing and HR being offered earlier.

   (E) None of these

3. **Effect**—Govt. has allowed all the airlines to charge additional amount as peak time congestion charges for the flights landing between 6.00 a.m. to 10.00 a.m.
Which of the following is a probable cause of the above effect ?
(A) All the airline companies had threatened to suspend their services during peak hours.
(B) The Govt. has increased its tax for peak time flights.
(C) The aircrafts are routinely put on hold over the airports while landing during peak time causing extra fuel consumption.
(D) The airlines companies can now charge unlimited additional charge for peak time flights.
(E) None of these

4. **Cause**—The cement manufacturing companies have increased the price of cement by about fifteen per cent with immediate effect.
Which of the following is/are possible effects(s) of the above cause ?
(1) Govt. will direct the cement manufacturing companies to reduce the price increase to five per cent.
(2) The prices of residential flats and commercial companies will see an upward trend.
(3) The construction companies may stop all on going construction projects with immediate effect.
(A) Only (2) (B) Only (1)
(C) Only (3) (D) Only (2) and (3)
(E) None of these

5. **Effect**—There has been unprecedented increase in the number of institutions training spoken phonetic English in all the major cities of India during the last few years.
Which of the following can be a probable cause of the above effect ?
(A) Many parents want their children to speak fluent English.
(B) Various activities being outsourced to India by many European and North American countries.
(C) English is no longer being taught in the schools and colleges in India.
(D) India has highest number of English speaking educated youth compared to any other country.
(E) None of these

Answers with Explanations

Exercise 1

1. (B) Statement (II) is the cause and statement (I) is its effect because the people participated in the dinner on account of the invitation.
2. (D) Both the statements (I) and (II) are effects of some independent causes because the shops and offices in the locality were closed due to other causes.
3. (E) Both the statements (I) and (II) are effects of some common causes because the urge of government for the enroll and the decision to increase tuition fee, together are the effects of common causes.
4. (B) Statement (II) is cause and statement (I) is its effects because on account of snapping of overhead electrical wire there was a result of disruption of train services.
5. (C) These both statements are independent causes.
6. (C) 7. (A) 8. (D) 9. (E) 10. (B)
11. (D) Both the statement I and II are effects of independent causes. Because spreading malaria or to be suffering from malaria may because mosquitoes and dirtiness. But the decision of private medical practitioners to close the clinics may be other causes.
12. (B) Because due to hike of taxes last year the State Government has announced special tax package for the new industries to be set up in the state.
13. (B) The transportation get effect due to the flood created by incessant rains in the most rural part of the state, therefore, on account of this, it is possible to increase the vegetable prices in the local market.
14. (A) Statement I is the cause and statement II is its effect.
15. (B) 16. (E) 17. (D) 18. (D) 19. (B)
20. (E) 21. (A) 22. (D) 23. (C) 24. (B)
25. (E)

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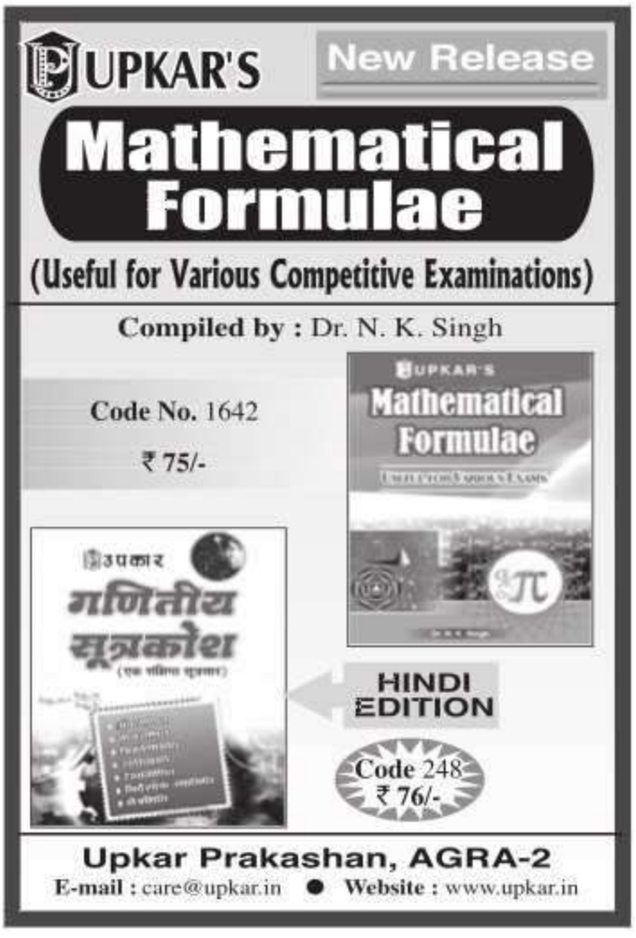


Passage

In such type of questions, a passage is given which is usually a part of report or an economic essay or any other similar thought-provoking topic or subject some inferences are given followed by the passage. Generally, there are five inferences the candidate is asked to decide whether the a given inference follows or not in the context of the passage.

The pattern of the passage is given below :

Directions—Given below a passage followed by five inferences based on it. The candidate has to examine the passage carefully and then decide the validity of the each inference.

Mark Answer—

(A) If the inference is 'definitely true' *i.e.*, it properly follows from the statement of facts given.

(B) If the inference is 'probably true' though not 'definitely true' in the light of the facts given.

(C) If the data are inadequate *i.e.*, from the facts given you cannot say whether the inference is likely to be true or false.

(D) If the inference is 'probably false' though not 'definitely false' in the light of the facts given.

(E) If the inference is 'definitely false' *i.e.*, it cannot possibly be drawn from the facts given or it contradicts the given facts.

We can solve the passage in three steps—

(i) Directly follows from the given passage.

(ii) Can be inferred from the given passage.

(iii) Can be inferred with the help of some key words in the given passage.

In the first step try the easy questions where an inference is more or less a restatement of some thing which is already stated in the passage. In the second step we check if the inference can be derived from the facts mentioned in the passage and in the third if step, we see if some key words justify the given inference.

Example of Passage—The immediate challenge is on the food front. Shortfalls in production have been allowed to affect supplies and hence prices. The Government is planning to focus on investment in irrigation and even revival of agricultural extension system what is probably needed is a fresh dose of Green Revolution strategy. It appears that the Green Revolution instruments to encourage farmers to invest are no longer effective. The Green Revolution strategy was based on the state taking out the risk of collapse in prices. Farmers were offered remunerative prices and a guaranteed procurement of their produce in case the open market could not absorb it. Farmers could then borrow from banks, acquire the Green Revolution Technology and produce as much as they could. The pressure on the food subsidy was manageable as long as there was a food shortage. Prices in the open market then tended to be above the procurement prices. But with the food surpluses the situation has changed. The situation was unsustainable not merely because of the magnitude of this subsidy. It was also inefficient. It meant farmers were being led to produce crops based just on the prices Government fixed and not in relation to any real demand. In these circumstances, the Government was reluctant to keep increasing procurement prices at the pace that used to be the norm in earlier years.

1. The Government is planning to make crucial changes in the Green Revolution strategies.
2. The Government is no longer in a position to provide subsidy to farmers.
3. As the open market prices are lower, all the burden of procurement of crops in on the Government.
4. Demand is much higher than the quantity of crops produced by the farmers.
5. The farmers tend to produce the crops as per their convenience and not consonant with the demand.

Answer with Explanation :

1. (B) The statement is probably true though not definitely true in the light of the facts given as according to the passage. "The Government is planning to focus on investment in irrigation and revival of agriculture extension which is probably needed in green revolution strategies."
2. (C) Nothing is said about it in the passage so the data are inadequate".
3. (A) The given statement is definitely true as it is given in the passage that the farmers were offered remunerative prices and a guaranteed procurement of their produce in case the open market could not absorb it.
4. (E) The given statement is definitely true because it is mentioned in the passage that the farmer were being led to produce crops based just on the prices government fixed and not in relation to any real demand.
5. (A)

Exercise

Directions—(Q. 1 to 5) Below is given a passage followed by several possible inferences which can be drawn from the facts stated in the passage. You have to examine each inference separately in the context of the passage and decide upon its degree of truth or falsity.

Mark Answer—

(A) If the inference is 'definitely true', *i.e.*, it properly follows from the statement of facts given.

(B) If the inference is 'probably true' though not 'definitely true' in the light of the facts given.

(C) If the 'data are inadequate', *i.e.*, from the facts given you cannot say whether the inference is likely to be true or false.

(D) If the inference is 'probably false', though not 'definitely false' in the light of the facts given.

(E) If the inference is 'definitely false', *i.e.*, it cannot possibly be drawn from the facts given or it contradicts the given facts.

Growth through acquisitions and alliances has become a critical part of creating value for pharma and bio-tech manufacturers and their shareholders. However, companies and their investors may risk value destruction if they acquire rights to a drug that suddenly poses unanticipated safety risks for patients.

Similarly, safety related compliance violations committed by an acquired company could significantly impair the ultimate value of the transaction and the reputation of the acquirer. The pace of deal making between pharma and biotech companies continued to accelerate in 2006, increasing 17% to about $ 18 billion. Pharma companies were typically the buyers, and the premiums they paid increased substantially as competition intensified, to secure access to novel drugs and biologics. The stakes increase everyday as competition pushes up prices and drives dealmaking to earlier development stages with greater uncertainty and less time to complete thorough due diligence.

1. Acquisitions of biotech companies was preferred among pharmaceutical companies in the recent past.
2. Biotech companies are not capable to acquire pharmaceutical companies.
3. Pharmaceutical companies at times may incur loss after acquisition of biotech companies.
4. Safety related issues are prime concerns for the pharmaceutical companies while negotiating acquisitions of biotech companies.
5. Stiff competitions among the prospective buyers have resulted into erosion of value of the biotech companies.

Directions—(Q. 6–10) Below given a passage followed by several possible inferences which can be drawn from the facts stated in the passage. You have to examine each inference separately in the context of the passage and decide upon its degree of truth or falsity.

Mark Answer—

(A) If the inference is 'definitely true', *i.e.*, it properly follows from the statement of facts given.

(B) If the inference is 'probably true' though not 'definitely true' in the light of the facts given.

(C) If the 'data are inadequate', *i.e.*, from the facts given you cannot say whether the inference is likely to be true or false.

(D) If the inference is 'probably false', though not 'definitely false' in the light of the facts given.

(E) If the inference is 'definitely false', *i.e.*, it cannot possibly be drawn from the facts given or it contradicts the given facts.

Growth through acquisitions and alliances has become a critical part of creating value for pharma and biotech manufacturers and their shareholders. However, companies and their investors may risk value destruction if they acquire rights to a drug that suddenly poses unanticipated safety risks for patients. Similarly, safety related compliance violations committed by an acquired company could significantly impair the ultimate value of the transaction and the reputation of the acquirer. The pace of deal making between pharma and biotech companies continued to accelerate in 2006, increasing 17% to about $ 18 billion. Pharma companies were typically the buyers, and the premiums they paid increased substantially as competition intensified, to secure access to novel drugs and biologics. The stakes increase everyday as competition pushes up prices and drives dealmaking to earlier development stages with greater uncertainty and less time to complete thorough due diligence—

6. Acquisitions of biotech companies was preferred among pharmaceutical companies in the recent past.
7. Biotech companies are not capable to acquire pharmaceutical companies.
8. Pharmaceutical companies at times may incur loss after acquisition of biotech companies.
9. Safety related issues are prime concerns for the pharmaceutical companies while negotiating acquisitions of biotech companies.
10. Stiff competitions among the prospective buyers have resulted into erosion of value of the biotech companies.

Directions—(Q. 11–15) Below is given a passage followed by several possible inferences which can be drawn from the facts stated in the passage. You have to examine each inference separately in the context of the passage and decide upon its degree of truth or falsity.

Mark Answer—

(A) If the inference is 'definitely true', *i.e.*, it properly follows from the statement of facts given.

(B) If the inference is 'probably true' though not 'definitely true' in the light of the facts given.

(C) If the 'data are inadequate', *i.e.*, from the facts given you cannot say whether the inference is likely to be true or false.

(D) If the inference is 'probably false', though not 'definitely false' in the light of the facts given.

(E) If the inference is 'definitely false' *i.e.*, it cannot possibly be drawn from the facts given or it contradicts the given facts.

The latest data to show that the overall power situation has gotten worse, with the ratio for peak-load shortages now the highest in a decade. In absolute terms, the power deficit has hit record levels and seems almost certain to further deteriorate without real reforms on the ground. Even as aggregate technical and commercial losses in the power system remain much high at over a third of total generation, pan-India capacity addition is now well below target. A shortage of equipment and skills is blamed for the marked slow down in augmenting power capacity. But the dearth of resources can only be relative. In fact, the real bane of the sector is continuing revenue leakage in the state power utilities and unaccept-

ably high aggregate technical and commercial losses, much of it plain theft of electricity. Given the preponderance of state utilities in power supply, the fact that they remain very much in red does affect investor comfort and return funds flow.

11. Indian power generation is largely controlled by private sector.
12. Reforms in power sector in India has not yet attained its desired level.
13. Indian power sector is yet to attain status comparable to developed countries.
14. Power theft is one of the major components of revenue losses in power sector.
15. Aggregate technical and commercial loss is much less than thirty per cent of the total power generation.

Directions—(Q. 16–20) Below is given a passage followed by several possible inferences which can be drawn from the facts stated in the passage. You have to examine each inference separately in the context of the passage and decide upon its degree of truth of falsity.

Now, mark your answer as—

(A) If the inference is 'definitely true' *i.e.*, it properly follows from the statement of facts given.

(B) If the inference is 'probably true' though not 'definitely true' in the light of the facts given.

(C) If the 'data are inadequate', *i.e.*, from the facts given you cannot say whether the inference is likely to be true or false.

(D) If the inference is 'probably false', though not 'definitely false' in the light of the facts given.

(E) If the inference is 'definitely false', *i.e.*, it cannot possibly be drawn from the facts given or it contradicts the given facts.

The main benefit to the economy from an active stock market is the ready availability of risk capital for investment in equities through the primary market. For that risk capital be readily available. Investors need to have an easy exit route. A liquid secondary market provides an easy exit route through the active involvement of buyers and sellers. It does not matter whether these buyers and sellers have short or long term investment horizons. Liquidity in the market is enhanced by leveraged players who either borrow to play the market or achieve a similar result through futures contracts whose economic value includes financing costs. Short sellers confer a similar benefit by borrowing stock or achieving the same result through futures contracts.

16. Nature of activity of the long-term players in the secondary market has significant effect on the health of stock market.
17. Players in the primary market generally borrow funds and earn money by quick disposal in the secondary market.
18. Active secondary market provides liquidity to the transactions in primary market.
19. Passive stock market enhances availability of capital.
20. Only short term buyers or sellers provide effective exit route to the primary market.

Answers with Explanations

1. (A) The inference is definitely true because according to the given passage "The pace of deal making between pharma and biotech in 2006 is increasing accelerately".
2. (C) According to the passage Pharma companies were typically the buyers but it is not necessary that Biotech companies are not capable to acquire pharmaceutical companies. Hence data is inadequate.
3. (A) The inference is definitely true as it is clearly mentioned in the passage. However companies and their investors may risk value destruction if they acquire rights to a drug that suddenly poses unanticipated safety risks for patients.
4. (B)
5. (E) The inference is definitely false as it is given in the passage that competition pushes up prices.
6. (A) The inference is definitely true because according to the given passage. "The pace of deal making between pharma and biotech in 2006 is increasing accelerately".
7. (C) According to the passage Pharma companies were typically the buyers out it is not necessary that Biotech companies are not capable to acquire pharmaceutical companies. Hence, data is inadequate.
8. (A) The inference is definitely true as it is clearly mentioned in the passage. However, companies and their investor may risk value destruction if they acquire rights to a drug that suddenly poses unanticipated safety risks for patients.
9. (B)
10. (E) The inference is definitely false as it is given in the passage that competition pushes up prices.
11. (C) In this passage, nothing is mentioned regarding Indian power generation. Hence, data are inadequate.
12. (B) As the whole passage narrates for the power situation, it can be inferred that reforms in power sector in India has not yet attained its desired level. Hence, the inference is probably true.
13. (C)
14. (A) Given in the passage much of it plain theft of electricity. Hence, 'definitely true.'
15. (E) Given in the passage aggregate technical and commercial losses in the power system remain much high at over a third of total generation and the inference contradicts the given facts. Hence, definitely false.
16. (B) Because the role of long term players has significant effect on the health of stock market and this inference can be probably true. We can only infer in the light of the facts given.
17. (C) No data are given in the passage.
18. (D) 19. (A)
20. (E) It contradicts the statement in the passage. The statement says that a liquid secondary market provides an easy exit route through the active involvement of buyers and sellers.

Figure Formation and Analysis

In such questions there is a box in problem figures. In this box there are some designs. In answer figures there are boxes. In these box there is a complete design in each box. The candidate has to find out from the answer figures which figure can be formed with the designs given in the box in problem figure. The following few examples will clear the idea :

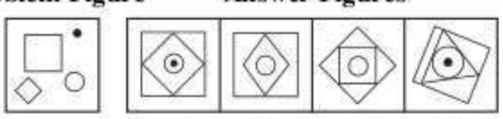
Example 1.

Problem Figure **Answer Figures**

Answer with Explanation : (B) By combining all the four rectangles given in the box in problem figure we get a figure as shown in box (B) in the answer figures. Hence the answer is (B).

Example 2.

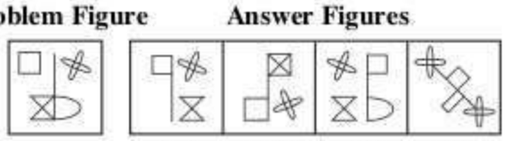
Problem Figure **Answer Figures**



Answer with Explanation : (A) By combining all the four designs given in the box in problem figure we get a figure as shown in box (A) in the answer figures. Hence the correct answer is (A).

Example 3.

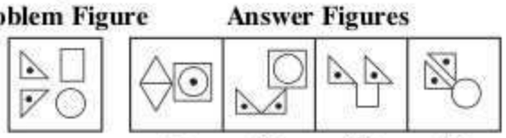
Problem Figure **Answer Figures**



Answer with Explanation : (C) There are three designs in the box in problem figure. All these three designs are present only in the box (C) of answer figure. Hence the answer is (C).

Example 4.

Problem Figure **Answer Figures**



Answer with Explanation : (B) In the box of Problem figure there are four designs. These all four designs are present only in answer box (B) in the answer figures. Hence the answer is (B).

Example 5.

Problem Figure **Answer Figures**

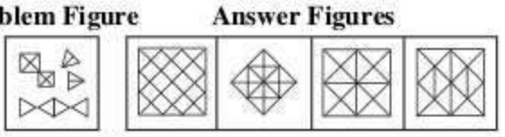
Answer with Explanation : (B) In the box of problem figure there are three designs. These all the three designs are present only in answer box (B) of the answer figures. Hence the answer is (B).

Exercise

Directions—(Q. 1 to 30). In each of the following questions, find out which of the answer figures can be formed from the pieces given in problem figure.

Problem Figure **Answer Figures**

1.



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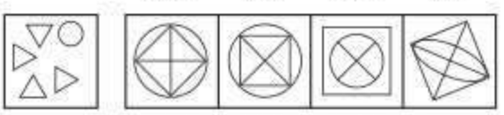

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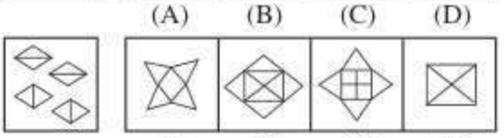

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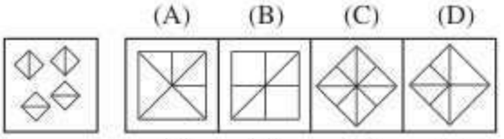

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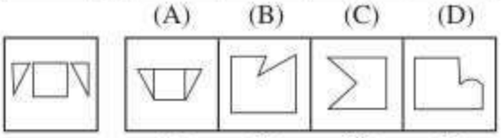

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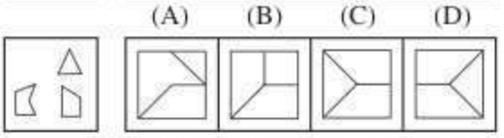

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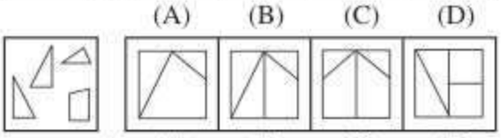

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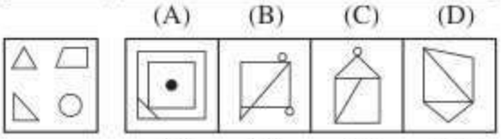

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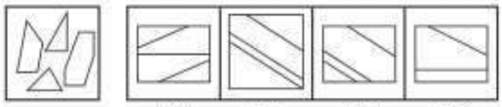
10. 
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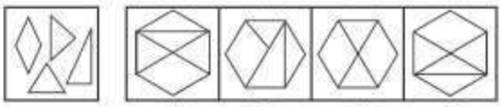
11. 
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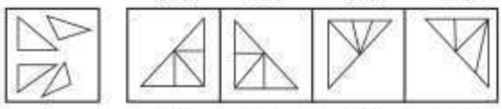
12. 
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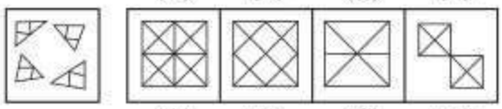
13. 
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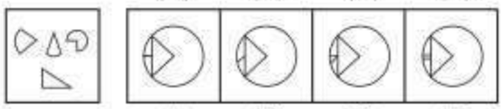
14. 
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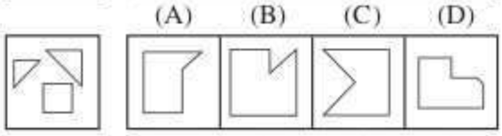
15. 
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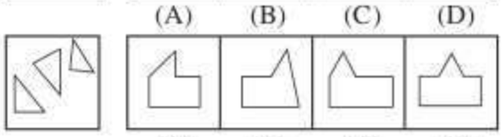
16. 
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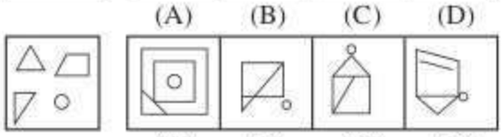
17. 
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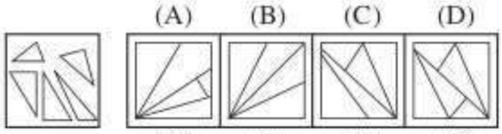
18. 
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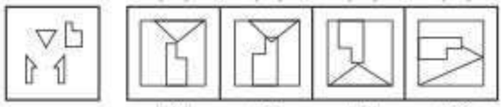
19. 
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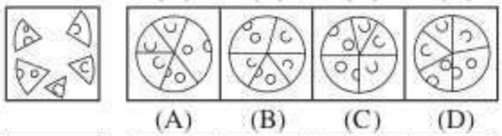
20. 
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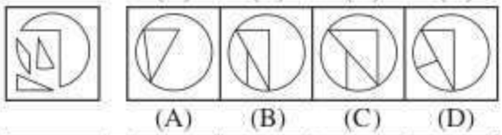
21. 
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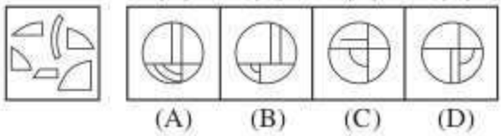
22. 
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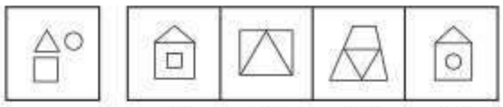
(A) (B) (C) (D)

24. 
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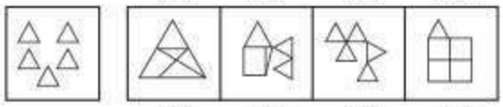
26. 
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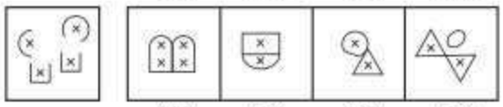
27. 
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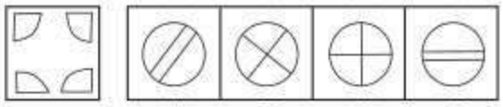
28. 
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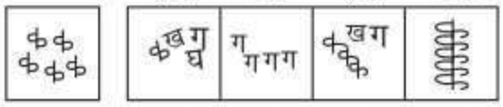
29. 
(A) (B) (C) (D)

30.
(A) (B) (C) (D)

Answers

1. (C)	2. (B)	3. (B)	4. (C)	5. (A)
6. (A)	7. (B)	8. (C)	9. (C)	10. (C)
11. (B)	12. (B)	13. (B)	14. (B)	15. (A)
16. (A)	17. (C)	18. (C)	19. (C)	20. (C)
21. (B)	22. (A)	23. (A)	24. (D)	25. (B)
26. (C)	27. (C)	28. (C)	29. (D)	30. (A)

Continued from Page 287

Exercise 2

1. (C) Only III follows. After finding the cause of the sickness, necessary action should be taken.
2. (E) To improve the standard in English Language, all the courses of action are necessary.
3. (D) In order to save the people from getting drowned all the courses of action are necessary.
4. (A) Such institutes should immediately be derecognised by the university. Hence, I course of action follows.
5. (B) Only II follows because providing relief supplies to the affected areas is necessary.

Verification of the Truth of the Statement

In such type of test, a incident is given and it is to be found that this incident occurs always or never. In some cases, any word or sentence is given and then a question is asked. Which is the most important factor/element in that word or sentence ? The questions are based upon Geographical, Scientific, Social, and Sports and Games related information.

Example 1. A person is going towards North in the night and he sees Dhruv Tara and sees it on his left side. Which of the following statements justify the fact ?

(A) Always (B) Sometimes
(C) Generally (D) Never

Answer with Explanation : (D) Since, we know that Dhruv Tara always appears on North and that person is also going towards North, clearly, he faces Dhruv Tara and it never appears on his right side.

Example 2. Bewilderness always comprises—

(A) Difficulty (B) Anxiety
(C) Helpless state (D) Sharpness

Answer with Explanation : (B) Bewilderness always comprises mental tension and mental tension causes anxiety.

Exercise 1

Directions—In each of the following questions, many alternative answers are given for a statement. Out of these alternatives only one answer verifies the statement. Find out the correct alternative.

1. If we are going towards South in the morning, we will see the Sun rising on the left side—
   (A) Always (B) Sometimes
   (C) Generally (D) Never
2. A boy is sitting on the back-seat of the car. When the driver of the car starts it suddenly, the boy bends towards the backside—
   (A) Always (B) Generally
   (C) Sometimes (D) Never
3. A lady in India can marry with the brother s of deceased husband but no man can marry the sister of deceased wife—
   (A) Always (B) Generally
   (C) Sometimes (D) Never
4. Yesterday I saw an ice-cube which had been melted in the heat of the hearth—
   (A) Always (B) Sometimes
   (C) Generally (D) Never
5. My 10 year niece is taller than my 12 year son—
   (A) Always (B) Generally
   (C) Sometimes (D) Never
6. A boy driving a bicycle put the brake suddenly he bends forward—
   (A) Sometimes (B) Never
   (C) Generally (D) Always
7. Sun shines on the pole at midnight—
   (A) Never (B) Sometimes
   (C) Always (D) Generally
8. High tides occurs on Maha-ashtami—
   (A) Sometimes (B) Never
   (C) Generally (D) Always
9. The main work of Rajya is to formulate the law—
   (A) Never (B) Sometimes
   (C) Always (D) Generally
10. Whenever the warm current and cold current interact with each other, there is always a fog—
    (A) Never (B) Sometimes
    (C) Never (D) Always
11. An inferior egg always sinks in water—
    (A) Never (B) Sometimes
    (C) Always (D) Generally
12. Ice-cube floats on water—
    (A) Generally (B) Sometimes
    (C) Never (D) Always

Exercise 2

1. Election must have—
   (A) Procession (B) Speech
   (C) Slogans (D) Candidates
2. Hills always comprise—
   (A) Trees (B) Animals
   (C) Water (D) Height
3. Justice is always related to—
   (A) Deceit (B) Generosity
   (C) Just (D) Nobility
4. A Tree always has—
   (A) Leaves (B) Flowers
   (C) Roots (D) Fruits
5. An animal always has—
   (A) Lungs (B) Skin
   (C) Brain (D) Heart
   (E) Life
6. A car must have—
   (A) Driver (B) Bonnet
   (C) Dicky (D) Bumper
   (E) Wheels

7. Run must have—
(A) Umpire (B) Competitors
(C) Spectators (D) Victory
(E) Prize

8. A book always comprises—
(A) Lessons (B) Pages
(C) Figure (D) Content

9. In a dispute there must be—
(A) Hatred (B) Injustice
(C) Dissent (D) Excitement

10. Bargaining always comprises—
(A) Generosity (B) Baseness
(C) Give and take (D) Costliness

11. Bravery must have—
(A) Courage (B) Intelligence
(C) Power (D) Experience

12. Astonishment always has—
(A) Crowd (B) Surprise
(C) Wastage (D) Rustic

13. Blameless always has—
(A) Punishment (B) Blame
(C) Prevention (D) Scold

14. Mentality always has—
(A) Cruelly (B) Perception vision
(C) Indifference (D) Impulse

15. A river must have—
(A) Fish (B) Weeds
(C) Banks (D) Boats

16. A factory must have—
(A) Chimney (B) Labour
(C) Electricity (D) Seller

17. A paragraph always has—
(A) Name System (B) Group of words
(C) Expression (D) Structure

18. Women is always—
(A) Beautiful (B) Black
(C) Charming (D) Fair
(E) Lengthy

19. A husband is always ..... than his wife.
(A) Taller (B) More handsome
(C) Bigger (D) More intelligent
(E) None of these

20. Bulky person's life is always—
(A) Longer (B) Merry
(C) Healthy (D) Short
(E) None of these

21. A debate always comprises—
(A) Room (B) Speaker
(C) Stage (D) Audience
(E) Typist

22. A college always comprises—
(A) Books (B) Building
(C) Black-board (D) Teacher
(E) Register

23. Farming always comprises—
(A) Cultivator (B) Tractor
(C) Spade (D) Land
(E) Labour

24. A country comprises—
(A) Aeroplane (B) King
(C) Army (D) Railway
(E) Area

25. Danger always comprises—
(A) Enemy (B) Attack
(C) Fear (D) Help

26. In management, ... is always followed.
(A) Counselling (B) Rules
(C) Encouragement (D) Undue Pressure

27. Disclosure always comprises—
(A) Mystery (B) Display
(C) Representative (D) Delivering

28. In every singing, it should have—
(A) Chorus (B) Musician
(C) Drum (D) Words

29. A lotus always comprises—
(A) Petals (B) Mud
(C) Roots (D) Water

30. Milk always comprises—
(A) Cream (B) Oilness
(C) Whiteness (D) Water

31. A camera always comprises—
(A) Reel (B) Photograph
(C) Flash (D) Lens

32. Dispute always comprises—
(A) Hatred (B) Opposition
(C) Injustice (D) Anger

33. Disease always comprises—
(A) Treatment (B) Medicine
(C) Germs (D) Reason

34. A motor cycle always comprises—
(A) Brake (B) Mirror
(C) Engine (D) Horn

Answers with Explanations

Exercise 1

1. (A) Sun rises in the East in the morning. If we go towards South direction in the morning, we face towards South and our left hand's position is on East direction. Hence, going towards Southwards Sun always appears rising from our left side.

2. (A) When car suddenly starts to move, the person who is sitting on the back-seat always bends towards backward.
3. (C) There is no such type of custom, hence it may happen sometimes.
4. (D) The piece of ice is placed near the burning hearth it melts with the heat of the hearth and it never happens that the ice had melted and later we saw the piece of ice.
5. (C) Since, the age of a person does not depend on his/her height, there are many other factors which affect the height.
6. (D) According to the rule of science, a cyclist uses the brakes suddenly he always bend down towards the forward direction.
7. (C) 8. (B) 9. (A) 10. (C)
11. (A) An inferior egg has low density therefore it sinks on the water.
12. (D) Ice is lighter than water hence the piece of ice always float on the water.

Exercise 2

1. (D) An election cannot be organized without candidates.
2. (D) Hills are always higher than plains.
3. (C) Justice is guided by the laws.
4. (C) The existence of a tree is not possible without its roots.
5. (E) Every animal has life.
6. (E) No car can run without wheels.
7. (B) In any run, there should be at least two contenders hence there must be a competitor.
8. (B) No book can be prepared without the pages.
9. (C) The meaning of dispute is ..... Discussion on two different views or opinions. Different views or opinions always comprise disagreement.
10. (C) Bargaining always comprises give and take of any thing, commodity or article.
11. (A) Bravery must have courage.
12. (B) Astonishment and surprise are synonyms to each other.
13. (B) The meaning of blameless is to free from blame. Hence, in blameless, there should always be blame.
14. (D) Impulse cause mentality.
15. (C) A river must have its bank.
16. (B) No factory can run without labour.
17. (B) Paragraph is a group of words.
18. (C) Every lady or woman is charming.
19. (E) It is not necessary that a husband must be taller and more handsome, bigger, more intelligent than his wife.
20. (D) The life of bulky person are always short because they are affected by various diseases.
21. (B) There must be a speaker in any debate.
22. (D) No college can run without a teacher.
23. (D) Farming is always done on the land.
24. (E) A country should have area.
25. (C) Danger always comprises fear because of insecurity.
26. (B) Management always gives improvement and for improvement, there should be some rules to follow.
27. (A) Disclosure means to tell a mystery and mystery means a hidden fact or point or topic. Hence, for disclosure there should be a mystery.
28. (D) For every singing , there should be some words.
29. (A) A lotus flower always has petals.
30. (C) Milk is always white.
31. (D) A camera must have lens.
32. (B) 33. (D) 34. (C)

Continued from Page 274

convinced about the reasons behind the Chakka jam strike call. Hence, assumption I is implicit. However, it is not necessary that people will support the main opposition party in future without knowing any strong and valid reason.

13. (E) In the letter, specific instruction has been given in writing to prevent chance of claim of reimbursement of travelling expenses. Moreover, it can also be assumed that instruction has been given because expenses are paid by other organization. Therefore, both the assumptions are implicit.
14. (B) It is not necessary that every company has a lawyer. Hence, assumption I is not implicit. As it is advised in the statement that for any difficulty about the case, consult company's lawyer. It is, therefore assumed that company's lawyer has been thoroughly briefed about the case. Therefore, assumption II is implicit.
15. (D) The statement explains that an executive should be task oriented as well as people oriented. It is based upon the assumptions that some executives are task oriented while some are people-oriented. Therefore, none of the assumptions follows.
16. (A) It can be assumed that the person instructed is capable of reading the book. However, we cannot say anything about the other sources of information. Hence, the information I is implicit.
17. (B) We cannot say that Anthony is not from the same city. However, it is assumed that unless invited, Anthony will not attend the party as invitation has been emphasised in the statement. Therefore, only assumption II is implicit.
18. (D) None of the assumptions is implicit because they are not related with the statement.
19. (E) It is clear that the reasons given for workers' dissatisfaction in both the companies are similar, that is why the same solution has been recommended for their problems. Secondly, it assumed in the context of the statement that monetary incentives have universal appeal.
20. (A) The school requires more teachers. It is assumed in the context of statement that teachers are available but it is not clear that present staff of teachers of that school is not good. Therefore, only assumption I is implicit.
21. (E) 22. (A) 23. (E) 24. (D) 25. (B)

Data Sufficiency

In this type of a question followed by two or more information is given. Questions are designed to test candidates ability to relate given information with that of required one based on the question asked. The questions consist of any topic such Coding-Decoding, Puzzle Test, Blood Relations, Mathematical calculation etc. The candidates is required to find out which of the given statements is/are sufficient to answer the given question. Sometimes single information is sufficient to answer the question though other information may also include relevant information. In such case that triangle information is our answer. Sometimes single information is not sufficient to answer the question a combination of information, which can help to answer the question, will be one answer.

Example—

Directions—(Q. 1–5) Each of the questions below consists of a question and two statements **numbered** I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give the answer—

(A) If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

(B) If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

(C) If the data either in statement I alone or in statement II alone are sufficient to answer the question.

(D) If the data given in both the statements I and II together are not sufficient to answer the question, and

(E) If the data in both the statements I and II together are necessary to answer the question.

1. Among M, N, T, Q and D, who is the youngest ?
   I. T and D are younger than M.
   II. Q is older than T, but younger than D and N.

2. How is 'steel' written in a code language ?
   I. 'steel container more costly' is written as 'ho na pa da' in that code language.
   II. 'buy more steel vessels' is written as 'na ka ta da' in that code language.

3. How many sons does K have ?
   I. M and T are brothers of D.
   II. D is the only daughter of N and K.

4. How is M related to P ?
   I. M's sister is married to R.
   II. R's brother is married to P's sister.

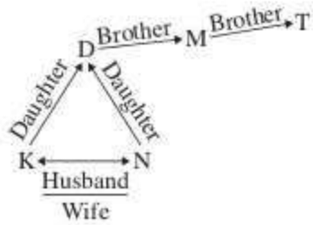
5. Who among Naveen, Mohan, Prakash and Kishore reached office first ?
   I. Mohan reached office before Naveen and Kishore, but was not the first to each office.
   II. Kishore reached office after Mohan, but before Naveen.

Answer with Explanation :

1. (C) According to the question,
From statement I.
$$M > T/D \quad \ldots(i)$$
and from statement II
$$D/N > Q > T \quad \ldots(ii)$$
$\therefore$ Data given in both the statements I and II together are not sufficient to answer the question.

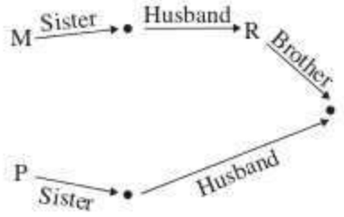
2. (D) According to the question,
From statement I.
steel container more costly → ho na pa da.
From II.
Buy more steel vessels → na ka ta da.
$\therefore$ From both I and II.
steel more → na da
Therefore, data in both the statement I and II together are not sufficient to answer the question.

3. (E) According to question,



$\therefore$ K has two sons 'M' and 'T'. Therefore, to answer the question data given in both the statements I and II together are necessary.

4. (E) According to the question,



Therefore, 'M' is the brother of 'P'. Hence, data in both the statements, I and II are necessary to answer the question.

5. (A) According to the question,
From statement I.

Prakash > Mohan > Naveen > Kishore

Therefore, data in statement I alone are sufficient to answer the question.

While the data in statement II alone are not sufficient to answer the question.

Exercise

Directions—(Q. 1–5) Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer—

(A) If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.

(B) If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.

(C) If the data either in statement I alone or in statement II alone is sufficient to answer the question.

(D) If the data in both the statement I and II together are not sufficient to answer the question.

(E) If the data in both the statements I and II together are necessary to answer the question.

1. How is M related to F ?

Statements—

I. F is sister of N who is mother of R.

II. M has brothers of which one is R.

2. On which date in March was Pravin's father's birthday ?

Statements—

I. Pravin correctly remembers that his father's birthday is after 14th but before 19th March.

II. Pravin's sister correctly remembers that their father's birthday is after 17th but before 21st March.

3. Among M, N, T, R and D each having different age who is the youngest ?

Statements—

I. N is younger than only D among them.

II. T is older than R and younger than M.

4. Village D is which direction of village H ?

Statements—

I. Village H is to the South of village A which is to the South-East of village D.

II. Village M is to the East of village D and to the North-East of village H.

5. How is 'food' written in a code language ?

Statements—

I. 'Always eat good food' is written as 'ha na pa ta' in that code language.

II. 'Enjoy eating good food' is written as 'ni ha ja pa' in that code language.

Directions—(Q. 6–10) Each of the questions below consists of a question and two statements numbered I and II are given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer—

(A) If the data in Statement I alone are sufficient to answer the question, while the data in Statement II alone are not sufficient to answer the question.

(B) If the data in Statement II alone are sufficient to answer the question, while the data in Statement I alone are not sufficient to answer the question.

(C) If the data either in Statement I alone or in Statement II alone are sufficient to answer the question.

(D) If the data in both the Statements I and II are not sufficient to answer the question.

(E) If the data in both the Statements I and II together are necessary to answer the question.

6. Among D, B, J, T and F who was the first person to reach the office ?

I. D reached before J and F but after B.

II. B was not the first to reach office.

7. What is the code for 'not' in the code language ?

I. In the code language 'do not go' is written as 'la ra de'.

II. In the code language 'go to school' is written as 'ka ma ra.'

8. How many children are there in the class ?

I. Rita ranks 23rd from the top.

II. Anita ranks 17th from the bottom and is five ranks above Rita.

9. How is Neela related to Deepa ?

I. Neela's mother is Deepa's brother's wife.

II. Neela is the only grand-daughter of Deepa's mother.

10. R is in which direction with respect to T ?

I. R is to the east of H who is to the north of T.

II. Q is to the east of T and to the South of R.

Directions—(Q. 11 to 15) Each of the questions below consists of a question and two statements numbered I and II are given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and given the answer—

(A) If the data in Statement I alone are sufficient to answer the question, while the data in Statement II alone are not sufficient to answer the question.

(B) If the data in Statement I alone are sufficient to answer the question, while the data in Statement I alone are not sufficient to answer the question.

(C) If the data in Statement I alone or in Statement II alone are sufficient to answer the question.

(D) If the data in both the Statements I and II are not sufficient to answer the question.

(E) If the data in both the Statements I and II together are necessary to answer the question.

11. Who among five boys Abhishek, Rajesh, Karan, Nitin and Vikas each having different height is second to the tallest among them ?

Statements :

I. Only Rajesh is taller than Karan.

II. Nitin and Vikas are shorter than Abhishek.

12. How many sons does Anita have ?

Statements :

I. Anita is mother of X who is brother of Y.

II. Anita's daughter Nikita has only two brothers.

13. What is the code for 'where' in the code language ?

Statements :

I. In the code language 'where is she' is written as 'ka ma te' and 'she is good' is written as 'te ka ro'.

II. In the code language 'where are you going' is written as 'la ma pa je' and 'where is the girl' is written as 'cha fa ma te'.

14. How many children are there in the row of children facing North ?

Statements :

I. Sangita is third from the left end of the row and is third to the left of Hasina.

II. Rakesh is fifth from the right end of the row and is third to the right of Hasina.

15. How is Nandini related to Santosh ?

Statements :

I. Nandini's brother is the only grandson of Santosh's father.

II. Nandini has only one brother.

Directions—(Q. 16–22) Each of the questions below consists of a question and two statements numbered I and II are given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give the answers—

(A) If the data in Statement I alone are sufficient to answer the question, while the data in Statement II alone are not sufficient to answer the question.

(B) If the data in Statement II alone are sufficient to answer the question, while the data in Statement I alone are not sufficient to answer the question.

(C) If the data either in Statement I alone or in Statement II alone are sufficient to answer the question.

(D) If the data even in both the Statements I and II are not sufficient to answer the question.

(E) If the data in both the Statements I and II together are necessary to answer the question.

16. 'F' is in which direction with respect to 'M' ?

I. F is to the West of Q which is to the West of M.

II. M is to the East of Q. F, M and Q are on the straight line.

17. What is Samir's rank from the top in the class of 30 students ?

I. Sudhir, who is four ranks above Samir, is fifteenth in rank from the bottom.

II. Samir is three ranks below Neeta who is eighteenth from the bottom.

18. In the code language what is the code for 'fat' ?

I. In the code language 'she is fat' is written as 'he ra ca'.

II. In the same code language 'fat boy' is written as 'ra ka'.

19. How many children are there in the group ?

I. Sangita has scored more marks than 12 children in the group.

II. Reena has scored less than Sangita.

20. Who among L, N, F, G and Q was the first to reach the college ?

I. F reached before L and G but not before Q who was not the first to reach.

II. N reached before F and G and L reached after F.

21. How is Nikhil related to Rama ?

I. Nikhil is the only grandson of Rama's father-in-law.

II. Rama has no siblings.

22. What is the value of 36$4★8 ?

I. P$Q means divide P by Q.

II. A★B means multiply A by B.

Directions—(Q. 23–27) Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give the answers :

(A) If the data in Statement I alone are sufficient to answer the question, while the data in Statement II alone are not sufficient to answer the question.

(B) If the data in Statement II alone are sufficient to answer the question, while the data in Statement I alone are not sufficient to answer the question.

(C) If the data either in Statement I alone or in Statement II alone are sufficient to answer the question.

(D) If the data in both the Statements I and II are into sufficient to answer the question.

(E) If the data in both the Statements I and II together are necessary to answer the question.

23. On which day of the week was Joseph born ?

I. Joseph's birthday was one day after his sister's birthday.

II. Joseph was born on the third day of the week.

24. M, P, D, K and R are sitting around a circle facing at the centre. Who is to the immediate right of P ?

I. D is sitting between M and R.

II. K is not to the immediate left of R.

25. How is D related to M ?

I. D has two sisters K and N.

II. K's father is brother of M.

26. How is 'go' written in a certain code language ?

I. 'go home now' is written as 'ja ho na' in that code language.

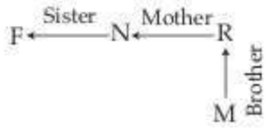
II. 'come home later' is written as 'pa ta ho' in that code language.

27. What is Samir's rank from the top in a class of 40 students ?

I. Nikhil who is five ranks below Samir is tenth from the bottom.

II. Suresh who is six ranks above Samir is twentieth from the top.

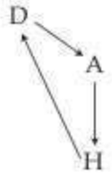
Answers with Explanations

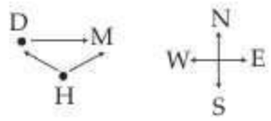
1. (E) 

∴ F is the maternal aunt of M.

2. (E) From I, His father's birthday is on 15 or 16 or 17 or 18th March.
From II, His father's birthday is on 18th or 19th or 20th March.
∴ Father's birthday is on 18th March.

3. (E) From I,
D > N > T, R, M
From II,
M > T > R
∴ The youngest is R.

4. (C) From I,


D is in N-W of H.
From II,


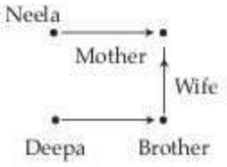
D is in N-W of H.

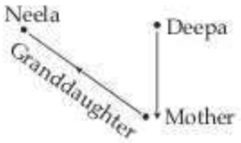
5. (D) From I, Always eat good food
→ ha na pa ta
From II, Enjoy eating good food
→ ni ha ja pa
∴ Code for 'food' cannot be known.

6. (E) From I and II,
T > B > D > J, F
∴ T reached the office first.

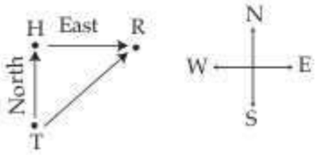
7. (D) From I,
La ra de → do not go
From II,
Ka ma ra → go to school
∴ I and II both together are not sufficient to answer the question.

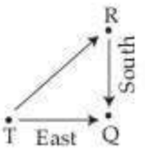
8. (E) From I,
Rita
22 + ●
From II,
● ● ● ● ● ● + 11
Anita + 4 Rita
∴ From I and II,
No. of children in the class = 18 + 16 = 34

9. (C) From I,


∴ Neela is the niece of Deepa.
From II,


∴ Neela is the daughter of Deepa.

10. (C) From I,


∴ R is in North-East of T
From II,


∴ R is in North – East of T

11. (A) From I, Only Rajesh is taller than Karan *i.e.*, Rajesh is the tallest and Karan is second to the tallest.
From II, Abhishek > Nitin and Vikash.

12. (B) From I,
Anita $\xleftarrow{\text{Mother}}$ X $\xleftarrow{\text{Brother}}$ Y
From II,
Anita $\xrightarrow{\text{Daughter}}$ Nikita ⟶ two brothers *i.e.*, Anita has two sons.

13. (C) From I,
'where is she' → 'ka ma te'
and 'she is good' → 'te ka ro'
∴ 'she is' → 'ka te'
∴ 'where' → 'ma'
From II, 'where are you going' → 'la ma pa je' and 'where is the girl' → 'cha fa me te'
∴ 'where' → ma

14. (E) From I,
● ● ● ● ● ●
Sangita Hasina
i.e., Hasina is 6th from the left.

From II,

● ● ● ● ● ● ●

Hasina Rakesh

∴ Total number of children facing North

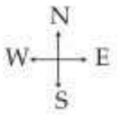
= 6 + 3 + 4 = 13.

15. (D) From I. The only grandson of Santosh's father *i.e.*, Santosh's son. Hence, Santosh is the father of Nandini but gender of Nandini is not clear so Nandini is son or daughter it is not clear.
From II, Nandini has only one brother. From this the relation between Nandini and Santosh cannot be found.

16. (A) From I,

• ← • ← •

F Q M



∴ F is in west of M.

From II,

• → •

Q M

∴ The answer is from only I.

17. (C) From I,

• • • • • + 14

↓ ↓

Sudhir Samir

∴ Samir's rank from the top = 30 – 15 + 1

= 16th

From II,

• • • • + 17

Neeta Samir

Neeta's rank from the top = (30 – 17) = 13th

∴ Samir's rank from the top = 13 + 3 = 16th

∴ The answer of the question can be obtained from only I or from only II.

18. (E) From I,

she is fat → he ra ca

From II,

fat boy → ra ka

∴ From I and II,

fat → ra

19. (D)

20. (A) From I, N > Q > F > L and G

∴ From I, N reached the college first.

From II,

N > F and G

and F > L

Hence, answer is obtained only from I.

21. (A) From I,

Only grandson of father-in-law

• ←——————— •

↓ ↓

Nikhil Rama

Hence, Nikhil is the son of Rama.

From II, the answer of question is not obtained.

22. (E) From I,

3 6 $ 4 → 36 ÷ 4 = 9

From II,

9 ★ 8 → 9 × 8 = 72

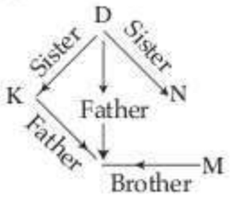
∴ From I and II together,

3 6 $ 4 ★ 8 = 72

23. (B) From II Joseph was born on 'Tuesday' because third day of the week is Tuesday.

24. (D)

25. (D) From I and II,



As D may be female or male.

Hence, the relation between D and M cannot be known.

26. (D) From I,

go home now → ja ho na

From II,

come home later → pa ta ho

∴ go → ja or na

27. (C) • • • • • • + 9

Samir Nikhil

∴ From I, rank of Samir from the top = 40 – 14

= 26th

From II, Samir rank from the top = 6 + 19 + 1

= 26th

19 + • • • • • • • •

Suresh Samir

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Miscellaneous Exercise

Directions—(Q. 1–5) In each of the questions given below one statement is followed by blank spaces which are followed by a conclusion which can be drawn from either the statement given in the question or from the statement which may fit in the blank space. You have to study the question and the alternatives which provide a statement and decide which of the answer figures best fit between the given statement and conclusion.

1. **Statement I**—The Government has decided to effect a significant increase in the procurement price of Kharif crops with immediate effect.
Blank space—_____
_____
Conclusion—The farmers' income will not get adversely effected this Kharif season.
(a) **Statement II**—The production of Kharif crops this season has surpassed the production level of all the earlier years.
(b) **Statement II**—The production of Kharif crops has declined considerably from that of the previous years.
(c) **Statement II**—The production of Kharif crops this year has remained unchanged in comparison with those of the previous years.
(A) Only (a)
(B) Only (b)
(C) Only (c)
(D) Any one of the above statements will fit.
(E) No additional statement is required to draw the conclusion.

2. **Statement I**—A very larg number of students of this college have secured more than 99 per cent aggregate marks in the final degree examination conducted recently.
Blank space—_____
_____
Conclusion—The question papers set by the university this year for all the colleges under its jurisdiction were comparatively much easier than the earlier years.
(a) **Statement II**—Students from other colleges under the university also have secured unusually higher percentage of marks.
(b) **Statement II**—The university does not have required number of teachers to evaluate the answer papers.
(c) **Statement II**—Students appeared in the previous year's examination secured comparatively less marks.
(A) Only (a)
(B) Only (b)
(C) Only (c)
(D) Any one of the above statements will fit.
(E) No additional statement is required to draw the conclusion.

3. **Statement I**—The agitating workers had taken out a peaceful procession in front of the factory gate to register their protest.
Blank space—_____
_____
Conclusion—The Government has suspended the Police Officer-in-Charge of the picket and initiated an inquiry into this incidence of police atrocity.
(a) **Statement II**—The workers had applied for a mass casual leave on the day of the incidence.
(b) **Statement II**—The agitating workers did not allow the policemen to enter the factory premises.
(c) **Statement II**—The police resorted to indiscriminate lathi charge on the agitating workers of the local factory.
(A) Only (a)
(B) Only (b)
(C) Only (c)
(D) Any one of the above statements will fit.
(E) No additional statement is required to draw the conclusion.

4. **Statement I**—The foreign direct investment in India has remained very low particularly in the infrastructure sector comparative to that in China.
Blank space—_____
_____
Conclusion—The Government has now set up a board of experts which is given full authority to approve proposals of foreign direct investment in the infrastructure sector within reasonable time.
(a) **Statement II**—The delay in approvals by the Government for the foreign direct investment proposals is inordinate because of complex approval system.
(b) **Statement II**—The people engaged so far in the approval system did not have the expertise to take quick decision.
(c) **Statement II**—The processing time in China to approve the foreign direct investment proposal is comparatively very low.
(A) Only (a)
(B) Only (b)

(C) Only (c)

(D) Any one of the above statements will fit.

(E) No additional statement is required to draw the conclusion.

5. **Statement I**—Every year during monsoon large number of people in the city suffer from various waterborne diseases and many of such people even succumb to these diseases.

Blank space—_____

_____

Conclusion—The civic authority has failed to put in place an effective mechanism to immune people from such waterborne diseases.

(a) **Statement II**—People are careless particularly in monsoon season about the quality of their food and drink.

(b) **Statement II**—The sewage system in the city has become very old resulting into mixing wih rainwater during monsoon.

(c) **Statement II**—The Government has been cautioning people every year to be careful about the waterborne diseases.

(A) Only (a)

(B) Only (b)

(C) Only (c)

(D) Any one of the above statements will fit.

(E) No additional statement is required to draw the conclusion.

Directions—(Q. 6–10) In each of the following questions two rows of numbers are given. The resultant number in each row is to be worked out separately based on the following rules. The operations of the numbers progress from left to right.

Rules—

(i) If a two digit odd number is followed by a prime number, the first number is to be multiplied by the prime number.

(ii) If an even number is followed by another even number, the first number is to be divided by the second number.

(iii) If an odd number is followed by a composite odd number, the first number is to be added to the second number.

(iv) If an even number which is multiple of 5 is followed by another number which is a multiple of 5, the second number is to be subtracted from the first number.

(v) If a number which is perfect square is followed by another number which is a perfect square, the resultant number is he product of the square roots of the two numbers.

Now work out the resultant numbers for each row in each question and answer the question below the rows of numbers.

6. 50 15 27
15 5 7

What is the sum of the resultants of the two rows ?

(A) 62 (B) 630

(C) 587 (D) 392

(E) None of these

7. 60 4 11
m 15 18

If *m* is the resultant of the first row, what is the resultant of the second row ?

(A) 180 (B) 10

(C) 165 (D) 22

(E) None of these

8. 50 25 49
31 21 4

What is the difference between the resultants of first row and the second row respectively ?

(A) 22 (B) 32

(C) 13 (D) 35

(E) None of these

9. 17 9 2
49 36 6

What is the product of the resultants of the two rows ?

(A) 72 (B) 26

(C) 20 (D) 91

(E) None of these

10. 64 25 25
88 8 *n*

If *n* is the resultant of the first row, what is the resultant of the second row ?

(A) 24 (B) 36

(C) 35 (D) 28

(E) None of these

Directions—(Q. 11–15) In each of the following questions two rows of numbers are given. The resultant number in each row is to be worked out separately based on the following rules and the question below the rows of numbers are to be answered. The operations of numbers progress from left to right.

Rules—

(i) If an odd numbers is followed by a two digit even number then they are to be added.

(ii) If an odd number is followed by a two digit odd number then the second number is to be subtracted from the first number.

(iii) If an even number is followed by a number which is a perfect square of a number then the second number is to be divided by the first number.

(iv) If an even number is followed by a two digit even number then the first number is to be multiplied by the second number.

11. 15 11 20 400
8 12 10

If the resultant of the second set of numbers is divided by the resultant of the first set of numbers what will be the outcome ?

(A) 196 (B) 200
(C) 19 (D) 92
(E) None of these

12. 40 30 3600
15 24 17

What is the sum of the two resultant numbers of the set of numbers given above ?

(A) 22 (B) 25
(C) 28 (D) 42
(E) None of these

13. 8 16 16 14
13 11 12 144

What is the difference between the resultant of the first set of numbers and the second set of numbers ?

(A) 222 (B) 210
(C) 118 (D) 106
(E) None of these

14. 13 11 4
17 13 12

If the resultant of the first set of numbers is multiplied by the resultant of the second set of numbers, what will be the outcome ?

(A) 48 (B) 96
(C) 69 (D) 75
(E) None of these

15. 19 15 12
15 12 23 16

If the resultant of the second set of numbers is subtracted from the resultant of the first set of numbers what will be the outcome ?

(A) 44 (B) 92
(C) 29 (D) 43
(E) None of these

Directions—(Q. 16–22) Study the following arrangement carefully to answer these questions—

5 H I 7 $ K J 4 % L A T 3 8 @ F 6 U # V P 1 E ★ 9 D 2

16. Which element is sixth to the right of fourteenth from the right end ?

(A) # (B) P
(C) U (D) 1
(E) None of these

17. How many such digits are there in the above arrangement each of which is immediately followed by a symbol which is immediately followed by a consonant ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

18. How many such consonants are there in the above arrangement each of which is immediately followed by a vowel but not immediately preceded by a symbol ?

(A) None (B) One
(C) Two (D) Three
(E) Four

19. Four of the following five are alike in a certain way on the basis of their positions in the above arrangement and so form a group. Which is the one that does not belong to the group ?

(A) J%4 (B) H7I
(C) T38 (D) E9★
(E) FU6

20. How many such vowels are there in the above arrangement, each of which is immediately followed by a symbol ?

(A) None (B) One
(C) Two (D) Three
(E) Four

21. If from the above arrangement, all the digits are dropped which element will be tenth from the left end ?

(A) F (B) @
(C) T (D) U
(E) None of these

22. What will come in place of the question mark (?) in the following series based on the above arrangement ?

H 7 $, K 4 %, L T 3, ?

(A) F6# (B) 8@6
(C) 8F6 (D) FU#
(E) None of these

Directions—(Q. 23–27) These questions are based on the following arrangements I & II. Study them carefully and answer the questions that follow—

I. P T 7 A # 4 B C 3 @ K F 1 9 ★
II. E H L © 6 8 $ U 5 J M 2 D % 1

23. How many such symbols are there in arrangements I and II together each of which is immediately preceded by a consonant and immediately followed by a numeral ?

(A) 3 (B) 4
(C) 5 (D) 1
(E) None of these

24. If P7© : TAL : : B3J : ?
(A) @KJ (B) C@J
(C) C@5 (D) 3KJ
(E) None of these

25. Which element will be third to the right of seventh element from right end in the arrangement I if the order of its elements is reversed ?
(A) 7 (B) #
(C) F (D) 1
(E) None of these

26. What will come in place of the question mark (?) in the following series based on the position of the elements in the above two arrangements ?
H7 ©# 8B ?
(A) U3 (B) $C
(C) 3J (D) UC
(E) None of these

27. If the third, the fifth, the seventh and the ninth elements in arrangement II are replaced by the respective elements in arrangement I, which element will be third to the left of sixth element from the right end in arrangement II ?
(A) $ (B) B
(C) 7 (D) L
(E) None of these

Directions—(Q. 28–32) These questions are based on the following letter/number/symbol arrangement. Study it carefully and answer the questions.

T 8 # 1 7 F J 5 % E R @ 4 D A 2 B © Q K 3 1 ★ U H 6 L

28. How many such symbols are there in the above arrangement, each of which is immediately preceded by a consonant and not immediately followed by a vowel ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

29. Four of the following five are alike in a certain way on the basis of their positions in the above arrangement and so form a group. Which is the one that does not belong to the group ?
(A) E@% (B) #78
(C) 5EJ (D) U6★
(E) QKB

30. How many such vowels are there in the above arrangement each of which is immediately preceded by a symbol and immediately followed by a number?
(A) None (B) One
(C) Two (D) Three
(E) More than three

31. What will come in place of the question mark (?) in the following series based on the above arrangement ?
TL8 #6I 7HF ?
(A) FUJ (B) JU★
(C) FU★ (D) JU5
(E) None of these

32. Which of the following is seventh to the right of thirteenth from the right ?
(A) 1 (B) ★
(C) F (D) 7
(E) None of these

Directions—(Q. 33–38) Study the following arrangement carefully and answer the questions given below—

B K 5 # M A 3 R % J 2 D E N @ 7 W 8 © 9 P T I V F 6 1 H Q ★ Y 4 $ L Z

33. Which of the following is the eighth to the right of the eleventh from the right end of the above arrangement ?
(A) W (B) ©
(C) 5 (D) $
(E) None of these

34. How many such consonants are there in the above arrangement, each of which is immediately preceded by a symbol but not immediately followed by a letter ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

35. If all the numbers from the above arrangement are removed, which of the following will be the twelfth from the left end ?
(A) @ (B) P
(C) I (D) N
(E) None of these

36. How many such symbols are there in the above arrangement, each of which is immediately followed by a number but not immediately preceded by a number ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

37. What should come in place of the question mark (?) in the following series based on the above arrangement ?
K # M 3 % J D N @ W © 9 ?
(A) T V 6 (B) T I F
(C) F 1 ★ (D) F 6 Q
(E) None of these

38. Four of the following five are alike in a certain way based on their positions in the above arrangement and so form a group. Which is the one that does not belong to that group ?
(A) J 3 D (B) I 6 P
(C) A 5 % (D) Y H $
(E) T © V

Directions—(Q. 39–44) These questions are based on the following arrangement of letter, number and symbol.

T 7 4 A G H K # 5 Q R % 2 3 D F ★ L M 6 B E 8 @ 1 $ P V 9

39. If KQ : R3; LB : ? on the basis of their positions in the above arrangement ?
(A) E1 (B) E@
(C) 81 (D) 8$
(E) None of these

40. Four of the following five are alike in a certain way on the basis of their position in the above arrangement, and so form a group. Which is the one that does not belong to the group ?
(A) GK# (B) QR2
(C) 3F★ (D) 6E8
(E) 1PV

41. How many such symbols are there each of which is immediately followed by a numeral but not immediately preceded by a numeral ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

42. How many such consonants are there in the above arrangement each of which is immediately preceded by a numeral ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

43. How many such numerals are there in the above arrangement each of which is immediately followed either by a vowel or by a symbol ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

44. Which element is the fifth to the right of the twelfth element from the right end of the arrangement ?
(A) @ (B) E
(C) 8 (D) B
(E) None of these

Directions—(Q. 45–49)—Study the following arrangement carefully and answer the questions given below—

R 5 M E % 4 W 1 A 2 D # K $ 3 P 9 @ F B © 8 J I 7 ★ H 6 Q V Y

45. Four of the following five are alike in a certain way based on their positions in the above arrangement and so form a group. Which is the one that does not belong to that group ?
(A) K 3 2 (B) J 7 B
(C) 4 1 M (D) 6 V 7
(E) P F $

46. If all the symbols in the above arrangement are removed, which of the following will be the fifth to the right of the eleventh from the left end ?
(A) F (B) D
(C) 8 (D) B
(E) None of these

47. How many such numbers are there in the above arrangement, each of which is immediately preceded by a consonant but not immediately followed by a consonant ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

48. Which of the following is the eighth to the right of the nineteenth from the right end of the above arrangement ?
(A) © (B) %
(C) D (D) H
(E) None of these

49. How many such symbols are there in the above arrangement, each of which is immediately preceded by a number and immediately followed by a consonant ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

Directions—(Q. 50–55) Study the following arrangement carefully and answer the questions given below—

R @ F δ 3 1 # M D U P 4 H © T 8 W N ★ A Q 5 E B I $ J % Y 2 7

50. Four of the following five are alike in a certain way based on their positions in the above arrangement and so form a group. Which is the one that does not belong to that group ?
(A) M D 1 (B) 4 H P
(C) 8 W T (D) Q 5 A
(E) J % $

51. How many such symbols are there in the above arrangement, each of which is immediately preceded by a number and immediately followed by a letter ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

52. If all the numbers are dropped from the above arrangement, which of the following will be the eleventh from the left end ?
(A) P (B) Q
(C) N (D) ©
(E) None of these

53. What should come next in the following series based on the above arrangement ?
F 3 1 D P 4 T W N
(A) 5 B I (B) Q E I
(C) Q E B (D) Q 5 B
(E) None of these

54. How many such numbers are there in the above arrangement, each of which is immediately preceded by a consonant and also immediately followed by a consonant ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

55. Which of the following is the eighth to the right of the seventeenth from the right end of the above arrangement ?

(A) E (B) D
(C) # (D) I
(E) None of these

Directions—(Q.56–60) Study the following arrangement carefully and answer the questions given below—

B ↑ A M 3 # D 2 E K 9 $ F @ N I T 4 1 U W © H 8 % V J 5 Y 6 ★ 7 R

56. How many such symbols are there in the above arrangements each of which is either immediately preceded by a letter or immediately followed by a letter but not both ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

57. If all the symbols in the above arrangement are dropped which of the following will be the twelfth from the left end ?

(A) 9 (B) U
(C) I (D) 1
(E) None of these

58. How many such numbers are there in the above arrangement each of which is immediately followed by a consonant but not immediately preceded by a letter ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

59. Four of the following five are alike in a certain way based on their positions in the above arrangement and so form a group. Which is the one that does not belong to that group ?

(A) D K 3 (B) 4 N U
(C) 8 J © (D) F K N
(E) 5 ★ %

60. Which of the following is the seventh to the right of the eighteenth from the right end of the above arrangement ?

(A) H (B) 9
(C) % (D) E
(E) None of these

Directions—(Q. 61–66) Study the following arrangement carefully and answer the questions given below—

N A 5 E % R 3 9 T K 1 D U 4 @ F © 8 I W 2 ★ Z 6 $ P 7 H M

61. If all the numbers in the above arrangement are dropped, which of the following will be the fifteenth from the left end ?

(A) ★ (B) @
(C) T (D) F
(E) None of these

62. Four of the following five are alike in a certain way based on their positions in the above arrangement and so form a group. Which is the one that does not belong to that group ?

(A) 5 E N (B) K 1 9
(C) 8 I F (D) 2 Z I
(E) P 7 6

63. How many such symbols are there in the above arrangement, each of which is immediately preceded by a letter and immediately followed by a number ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

64. Which of the following is the sixth to the right of the nineteenth from the right end of the above arrangement ?

(A) U (B) %
(C) © (D) $
(E) None of these

65. What should come in the place of question mark (?) in the following series based on the above arrangement ?

A E %, 9 K 1, 4 F ©, ?

(A) W ★ 6 (B) W ★ Z
(C) W 2 Z (D) I 2 ★
(E) None of these

66. How many such consonants are there in the above arrangement, each of which is immediately preceded by a number and not immediately followed by a symbol ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

Directions–(Q. 67–72) Study the following arrangement carefully and answer the questions given below.

Q 9 K # P @ 3 E N S A C ★ G © U M 7 F I V % 4 Z 8 Y

67. If all the numbers are dropped from the above arrangement, which of the following will be the seventeenth from the right end ?

(A) E (B) P
(C) I (D) C
(E) @

68. Which of the following is the sixth to the left of the fifth to the left of 'V' ?

(A) 3 (B) A
(C) N (D) S
(E) None of these

69. Which of the following is the eighth to the right of the fourteenth from the left end of the above arrangement ?
(A) V (B) 4
(C) % (D) E
(E) None of these

70. Four of the following five are alike in a certain way based on their positions in the above arrangement and so form a group. Which is the one that does not belong to that group ?
(A) IM% (B) CNG
(C) 3#N (D) UGC
(E) GAU

71. How many such symbols are there in above arrangement, each of which is immediately preceded by an alphabet and immediately followed by a number ?
(A) None (B) One
(C) Two (D) Three
(E) More than three

72. How many such vowels are there in the above arrangement, each of which is immediately preceded by a number and immediately followed by a consonant ?
(A) None (B) One
(C) Three (D) Two
(E) None of these

Directions—(Q. 73–79) These questions are based on the following arrangement of numerals, symbols and letters.

W T D I 5 M K % L $ 3 7 F E B # 1 G H A © @ J U V 2 4

73. If the first ten elements in the arrangement are reversed, which element will be third to the left of eleventh element from the left ?
(A) D (B) %
(C) K (D) I
(E) None of these

74. If all the vowels are dropped from the arrangement, which element will be fifth to the right of the thirteenth element from the right ?
(A) H (B) G
(C) A (D) 1
(E) None of these

75. How many such vowels are there in the above arrangement which are immediately preceded as well as immediately followed by a consonant ?
(A) None (B) One
(C) Two (D) Three
(E) None of these

76. Which element is exactly midway between the eighth element from the left and the tenth element from the right ?
(A) E (B) 7
(C) B (D) #
(E) None of these

77. If KL : $7, then B1 : ?
(A) GA (B) H©
(C) GH (D) ©J
(E) None of these

78. How many such symbols are there in the above arrangement each of which is immediatley followed by a numeral and also immediately preceded by a letter ?
(A) None (B) Two
(C) Three (D) One
(E) None of these

79. Four of the following five are alike in a certain way on the basis of their position in the above arrangement and so form a group. Which is the one that does not belong to the group ?
(A) D5W (B) L3K
(C) E#7 (D) H©G
(E) U2@

Directions—(Q. 80–84) In each of these questions a group of digits is given followed by four combinations of letter/symbol codes lettered (A), (B), (C) and (D). The group of digits is to be coded as per the following scheme and conditions. The serial number of the combination that represents the group of digits is your answer. If none of the combinations is correct, your answer is (E) *i.e.*, 'None of these'.

Digits	:	5	1	4	8	9	3	6	2	7	0
Letter/Symbol	:	Q	T	%	#	E	F	$	L	W	@

Conditions :
(i) If the first digit is odd and the last digit is even, their codes are to be swapped.
(ii) If the first as well as the last digit is even both are to be coded by the code for first digit.
(iii) If the first digit is even and the last digit is odd, both are to be coded by the code for odd digit.

80. 384695
(A) F#%$EF (B) F#%$EQ
(C) Q#%$EQ (D) Q#%$EF
(E) None of these

81. 584632
(A) Q#%$FL (B) L#$%FQ
(C) L#%$QF (D) L#%$FQ
(E) None of these

82. 431068
(A) %FT@$# (B) %FT$@#
(C) %FT@$% (D) #FT@$#
(E) None of these

83. 803279
(A) E@FLWE (B) #@FLWE
(C) #@FLW# (D) E@FLW#
(E) None of these

84. 765984

(A) W$QE% (B) W$QE#W

(C) %$QE#% (D) %$QE#L

(E) None of these

Directions—(Q. 85–92) Study the following information carefully and answer the questions given below.

Digits in the numbers are to be coded as follows—

Digit :	3	5	7	2	4	6	1	8	9
Code :	F	K	R	L	D	T	G	H	B

Following conditions are to be applied—

(i) If the first digit is even and the last digit is odd, both are to be coded as X.

(ii) If the first digit is odd and the last digit is even, both are to be coded as A.

(iii) If the first digit as well as the last digit is even, both are to be coded as the code for last digit.

(iv) If the first digit as well as the last digit is odd, both are to be coded as the code for the first digit.

Applying above conditions you have to find out the correct code for the number in each question and indicate your answer accordingly. If none of the codes is correct, (E) *i.e.*, 'None of these' is your answer.

85. 392648

(A) ALBTDA (B) XBLTDA

(C) XBLTDX (D) ABLTDA

(E) None of these

86. 635297

(A) AFLKBX (B) XFLKBX

(C) XFKLBX (D) AFKLBA

(E) None of these

87. 467392

(A) DTRFBD (B) LTRFBL

(C) DTRFBL (D) LTRFBD

(E) None of these

88. 725638

(A) ALKTFH (B) ALKTFA

(C) XLKTFX (D) XLKTFH

(E) None of these

89. 148386

(A) XDHFRA (B) ADHFRA

(C) ADHFRX (D) ADHRFA

(E) None of these

90. 279654

(A) LRBTKD (B) LRBTKL

(C) DRBTKL (D) DRTBKD

(E) None of these

91. 364289

(A) BTDLHB (B) FTDLHB

(C) FTDLHF (D) BTDLHF

(E) None of these

92. 521437

(A) KLGDFK (B) RLGDFR

(C) KLGDFR (D) KLDGFK

(E) None of these

Directions—(Q. 93–98) Study the following information carefully and answer the questions given below—

Digits in the numbers are to be coded as follows :

Digit :	2	5	7	1	3	6	9	8	4	0
Code :	P	D	M	R	F	L	J	Z	H	K

The following conditions are to be applied—

(i) If the first digit is even and the last digit is odd, each of the even digits in the number is to be coded as 'A'.

(ii) If the first digit is odd and the last digit is even, each of the odd digits in the number is to be coded as 'B'.

(iii) If '0' is the last digit of the number, it is to be coded as 'X'.

(iv) If first and the last digits either both are even or both are odd, then both are to be coded 'Y'.

(v) 0' is neither even nor odd.

Applying the above conditions you have to find out the correct code for the number in each question and indicate your answer accordingly. If none of the codes is correct, (E) *i.e.*, 'None of these' is your answer.

93. 375481

(A) YMDLZY (B) XMDHZX

(C) YMDHZY (D) XMDLZX

(E) None of these

94. 871543

(A) BMRDHB (B) AMRDHB

(C) BMRDHA (D) AMRDHA

(E) None of these

95. 586342

(A) DAAFAA (B) BZLBHP

(C) BZLFHB (D) AZLAHP

(E) None of these

96. 639487

(A) AFJAAM (B) BFJBBM

(C) AFJHZA (D) BFJHZB

(E) None of these

97. 647320

(A) LHMFPK (B) LHFMPX

(C) LHMFPX (D) LHFMPK

(E) None of these

98. 430912

(A) XFKJRX (B) YFXJRY

(C) XFYJRX (D) YFKJRY

(E) None of these

Directions—(Q. 99–103) In each question below is given a group of digits/symbols followed by four combination of letters lettered (A), (B), (C) and (D). You have to find out which of the combination correctly represents the group of digits/symbols based on the following coding system and the conditions those follow. If none of the combinations correctly represents the group of letters/digits, give (E) *i.e.*, 'None of these' as the answer.

Digit/Symbol : 1 # $ 9 8 6 % @ © 7 2 4 ★ 3 5

Letter Code : B D E N I V R G H K T J J P F A

Conditions :

(i) If both the first and the last elements in the group are odd digits both are to be codes as 'Y'.

(ii) If the first element is a symbol and the last element is an even digit, the codes for the first and the last elements are to be interchanged.

(iii) If the first element is an odd digit and the last element is a symbol, both are to be coded as 'Z'.

(iv) If the first element is an even digit and the last element is an odd digit, both are to be coded as the code for the odd digit.

99. 3$95#1
(A) FENADB (B) BENADF
(C) ZENADZ (D) FENADF
(E) None of these

100. 8%©3#5
(A) YRHFDY (B) ARHFDI
(C) ARHFDA (D) YRHFDA
(E) None of these

101. ©8143★$
(A) EIBJFPH (B) VIBJFPY
(C) EIBJFP# (D) HIBJFPE
(E) None of these

102. 6%@9#3
(A) VRGNDF (B) FRGNDF
(C) YRGNDF (D) ZRGNDZ
(E) None of these

103. ★$6724
(A) JEVKTP (B) PEVKTJ
(C) YEVKTY (D) ZEVKTZ
(E) None of these

Directions—(Q. 104–109) In each question below, a group of digits/ symbols is given followed by four combinations of letters lettered (A), (B), (C) and (D). You have to find out which of the combinations (A), (B), (C) and (D) correctly represents the group of digits/symbols based on the following coding system and mark the letter of that combination as your answer. If none of the four combinations correctly represents the group of digits/symbols, mark (E) *i.e.*, 'None of these' as the answer.

Digit/Symbol : 5 2 3 % 6 @ © 9 4 $ 1 ★ 8 7 #

Letter : N B D E U J K I A P M T R H F

Conditions :

(i) If the first element in the group is an odd digit and the last element is an even digit, the codes for the first and the last elements are to be reversed.

(ii) If the first element is a symbol and the last element is a digit, both are to be coded as 'Y'.

(iii) If the first element is a digit and the last element is a symbol, both are to be coded as 'Z'.

(iv) If both the first and the last elements are even digits, both are to be coded as the code for the first element.

104. 43#©16
(A) ADFKMU (B) ADFKMA
(C) UDFKMU (D) UDFKMA
(E) None of these

105. @92©$5
(A) JIBKPN (B) YIBKPY
(C) ZIBKPZ (D) NIBKPJ
(E) None of these

106. 51%3@$
(A) NMEDJP (B) PMEDJN
(C) YMEDJY (D) ZMEDJZ
(E) None of these

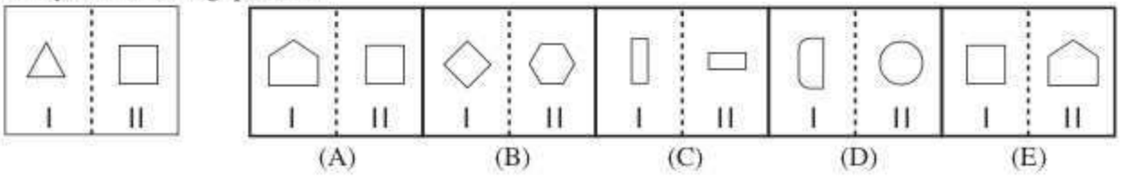
107. 9@2463
(A) IJBAUD (B) DJBAUI
(C) IJBAUI (D) DJBAUI
(E) None of these

108. 2#4197
(A) BFAMIH (B) HFAMIB
(C) BFAMIB (D) ZFAMIZ
(E) None of these

109. 74%★28
(A) HAETBR (B) ZAETBZ
(C) YAETBY (D) HAETBH
(E) None of these

Directions—(Q. 110–114) In each of the following questions, a related pair of figures is followed by five lettered pairs of figures. Select the pair that has a relationship similar to that in the unlettered pair. The best answer is to be selected from a group of fairly close choices.

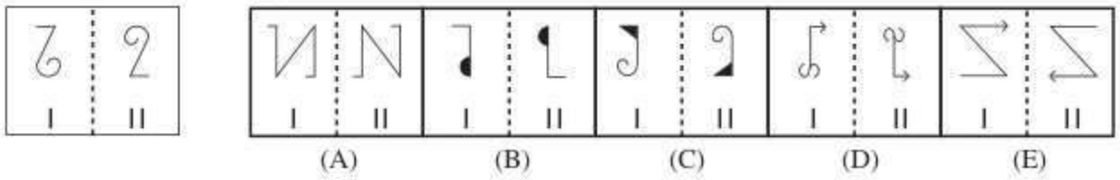
Study the following question.



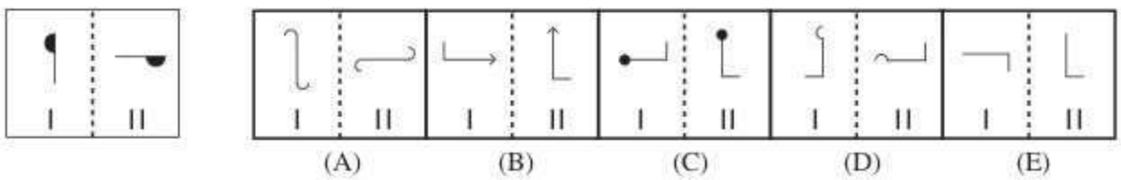
In this question element II of unlettered figure is related to the element I of the figure in a certain way. Element II has one side more than the element I. The pair in the figure No. E has the same relationship. Therefore, E is the answer.

Now solve the following questions.

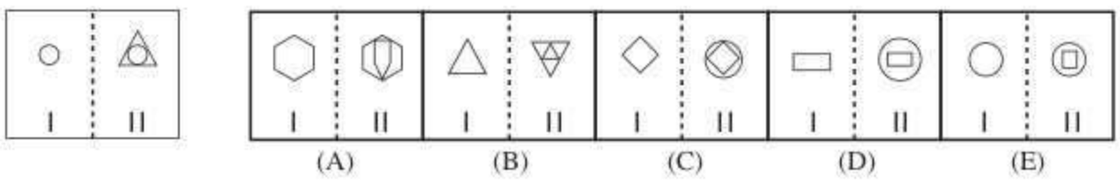
110.



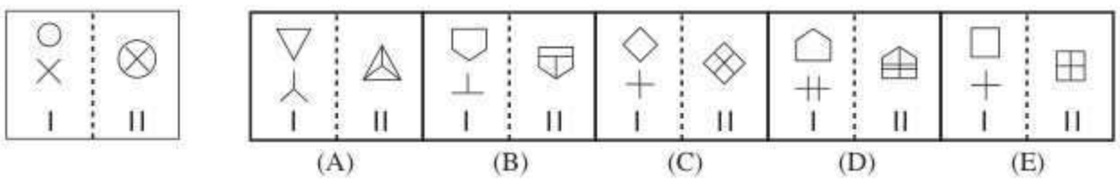
111.



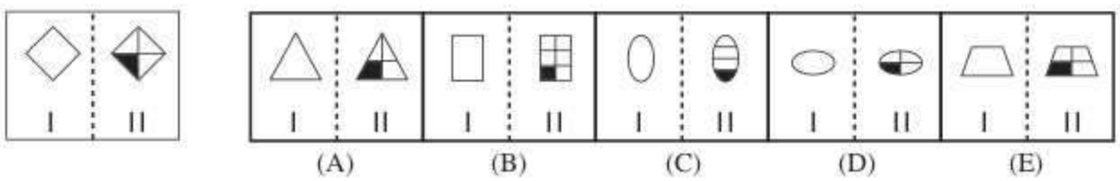
112.



113.

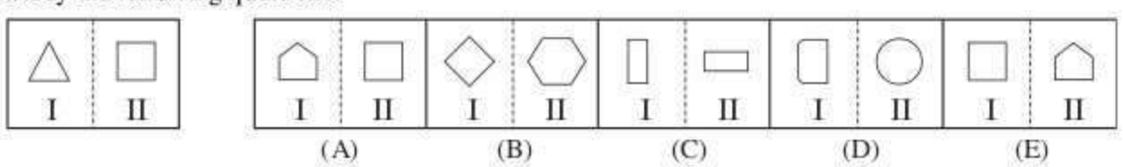


114.



Directions—(Q. 115–119) In each of the following questions, a related pair of figures is followed by five lettered pairs of figures. Select the pair that has a relationship similar to that in the unlettered pair. The best answer is to be selected from a group of fairly close choices.

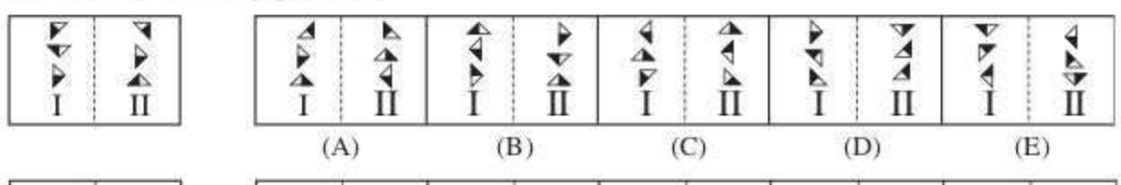
Study the following questions.



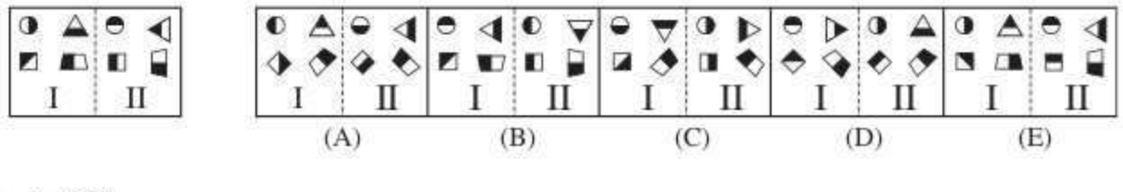
In this question element II of unlettered figure is related to the element I of the figure in a certain way. Element II has one side more than the element I. The pair in the figure letter (E) has the same relationship. Therefore, (E) is the answer.

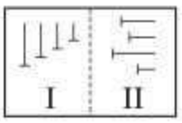
Now solve the following questions.

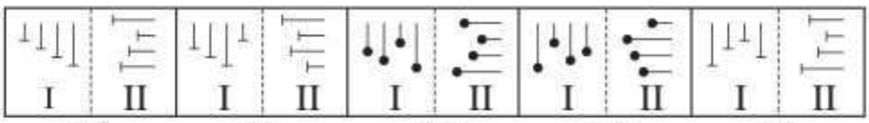
115.



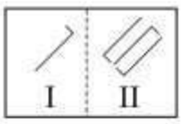
116.

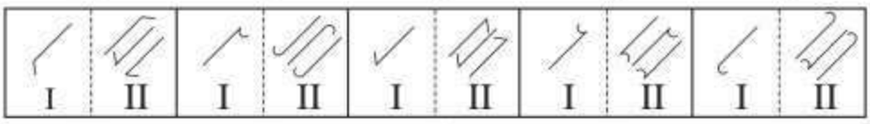


117. 

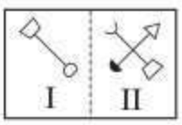


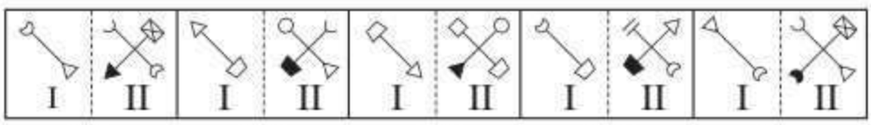
(A) (B) (C) (D) (E)

118. 



(A) (B) (C) (D) (E)

119. 



(A) (B) (C) (D) (E)

Answers with Explanations

1. (B) 2. (A) 3. (C) 4. (C) 5. (B)

6. (E) 50 15 → 50 – 15 = 35
35 27 → 35 + 27 = 62
15 5 → 15 – 5 = 10
10 7 → 10 × 7 = 70
∴ Required sum = 62 + 70
= 132

7. (E) 60 4 → 60 ÷ 4 = 15
∴ 15 11 → 15 × 11 = 165
∴ m = 165
165 15 → 165 – 15
= 150
150 18 → 150 ÷ 18
= $\frac{150}{18} = \frac{25}{3}$

8. (A) 50 25 → 50 – 25 = 25
25 49 → 5 × 7 = 35
31 21 → 31 + 21 = 52
52 4 → $\frac{52}{4} = 13$
∴ Required difference = 35 – 13 = 22.

9. (D) 17 9 → 17 + 9 = 26
26 2 → $\frac{26}{2} = 13$
49 36 → 7 × 6 = 42
42 6 → $\frac{42}{6} = 7$
∴ Required products = 13 × 7 = 91.

10. (E) 64 25 → 8 × 5 = 40
40 25 → 40 – 25 = 15
∴ n = 15
88 8 → $\frac{88}{8} = 11$
11 15 → 11 + 15 = 26

11. (E) For set I, 15 11 20 400
15 – 11 = 4, 4 × 20 = 80, $\frac{400}{80} = 5$
For set II, 8 12 10
8 × 12 = 96, 96 × 10 = 960
∴ Required answer = $\frac{960}{5}$
= 192

12. (B) For set I, 40 30 3600
40 × 30 = 1200, $\frac{3600}{1200} = 3$
For set II, 15 24 17
15 + 24 = 39, 39 – 17 = 22
∴ Required answer = 3 + 22 = 25

13. (D) For set I, 8 16 16 14
$\frac{16}{8} = 2$ $\frac{16}{2} = 8$, 8 × 14 = 112
For set II, 13 11 12 144
13 – 11 = 2, 2 × 12 = 24 $\frac{144}{24} = 6$
∴ Required answer = 112 – 6 = 106.

14. (B) For set I, 13 11 4
13 – 11 = 2, $\frac{4}{2} = 2$
For set II, 17 13 12
17 – 13 = 4, 4 × 12 = 48
∴ Required answer = 2 × 48 = 96.

15. (A) For set I, 19 15 12
19 – 15 = 4, 4 × 12 = 48
For set II, 15 12 23 16
15 + 12 = 27, 27 – 23 = 4, $\frac{16}{4} = 4$
∴ Required answer = 48 – 4 = 44.

16. (E) Reqd. element is 'V'.

17. (D) Reqd. digits are 7, 4 and 8.

18. (B) Reqd. constant is only 'H'.

19. (C) J % 4 H 7 I T 3 8
(+2 −1 +2 −1 +1 +1)
E 9 ★ F U 6
(+2 −1 +2 −1)

20. (C) U and E.

21. (B) After dropping all the digits we get—
H I $ K J % L A T [@] F U # V P E ★ D
In it the 10th element from the left end is @.

22. (C) (+4 +4 +4)
H 7 $ K 4 % L T 3 8 F 6
(+2 +1 +2 +1 +2 +1 +2 +1)

23. (E) L © 6 and D % 1

24. (C) P 7 : T A :: B 3 : C @
(+2 © +2 L +2 J +2 5)

25. (E) After reversing the elements of I 7th element from the right is B and 3rd element to the right of B is A.

26. (A) 7 # B 3
H © 8 U

27. (B) After replacing the elements
E H 7 © # 8 [B] U 3 J M 2 D % 1
6th element from right is J and 3rd to the left of J is B.

28. (C) R @ 4 and B © Q.

29 (E)
E @ % # 7 8 5 E J
(+2 −3 +2 −3 +2 −3)
U 6 ★ Q K B
(+2 −3 +1 −3)

30. (B) # I 7

31. (D)
T →(+2) # →(+2) 7 →(+2) J
L →(−1) 6 →(−1) H →(−1) U
8 →(+2) I →(+2) F →(+2) 5

32 (A) 13th element from the right is 'A' and 7th to the right of 'A' is 1.

33. (D) 11th element from the right end is 'F' and 8th element to the right of F is $.

34. (C) % J 2 and ★ Y 4

35. (A) After removing all the numbers, we get
B K # M A R % J D E N @ W © P T I V F H Q ★ Y $ L Z
The 12th element from the left end is @.

36. (B) N @ 7

37. (E) (+2 +2 +2 +2)
K # M 3 % J D N @ W © 9 T V F
(+2 +1 +2 +1 +2 +1 +2 +1 +2 +1)

38. (C) J 3 D I 6 P A 5 % Y H $ T © V
(−3 +5 +3 −5 −3 +6 −3 +5 −3 +5)

39. (A) K Q : R 3, L B : E 1
(+3 +1 +3 +3 +1 +3)

40. (B)
G K #, Q R 2, 3 F ★,
(+2 +1 +1 +2 +2 +1)
6 E 8, 1 P V
(+2 +1 +2 +1)

41. (C) K # 5 and R % 2

42. (D) 5Q, 3D and 6B

43. (D) 4A, 1$ and 8@

44. (C) 12th element from the right end of the arrangement is L and 5th element to the right of L is 8.

45. (E)
K 3 2, J 7 B, 4 1 M,
(−5 −5 −5 +2 +2 +2)
6 V 7, P F $
(−5 −5 +2 +3)

46. (D) After deleting all the symbols, we get—
R 5 M E 4 W 1 A 2 D [K] 3 P 9 F [B] 8 J I 7 H 6 Q V Y
Here, 11th element from the left is **K** and 5th to the right of K is **B.**

47. (C) W 1 A and P 9 @

48. (A) 19th element from the right end is **K** and 8th element to the right of K is ©.

49. (C) 9 @ F and 7 ★ H

50. (A) M D 1, 4 H P, 8 W T,
(−3 −2 −2 +1 +1 +1)
Q 5 A, J % $
(−2 −2 +1 +1)

51. (B) 1 # M

52. (D) After removing all the numbers :
R @ F δ # M D U P H © T W N ★ A Q E B I $ J % Y
Here the 11th element from the left end is ©.

53. (C) (+1 +3 +1 +3 +1 +3 +1)
F 3 1 D P 4 T W N [Q E B]
(+2 +2 +2 +2)

54. (C) P 4 H and T 8 W

55. (A) 17th element from the right end is T and 8th element to the right of T is 'E'.

56. (D) 9$F, 3#D and 8%V.

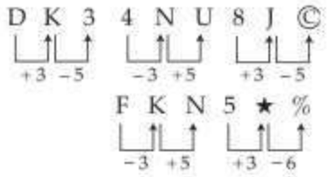
57. (C) After dropping all the symbols from the given arrangement, we get

B A M 3 D 2 E K 9 F N I T 4 1 U W H 8 V J 5 Y 6 7 R.

12th element from the left end is I.

58. (B) ★7.R.

59. (E)



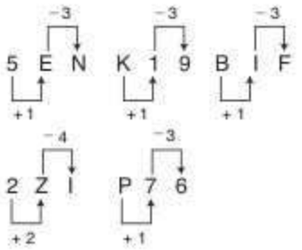
60. (A) 18th element from the right end is I and 7th element to the right of I is H.

61. (A) After removing all the numbers :

N A E % R T K D U @ F © I W ★ Z $ P H M

Here 15th from the left end is ★.

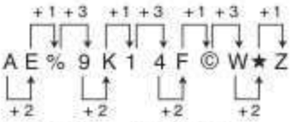
62. (D)



63. (B) F © 8

64. (C) Here 6th to the right of the 19th from the right end is ©.

65. (B)



66. (D) 9 **T** K,1 **D** U and 7 **H** M

67. (E) After removing all the numbers :

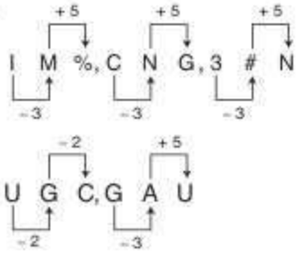
Q K # P @ E N S A C ★ G © U M F I V % Z Y

Here 17th element from the right end is @.

68. (D) In the given series 5th element from the left to 'V' is 'U' and 6th to the left of 'U' is 'S'.

69. (C) 14th element from the left end is 'G' and 8th element to the right of 'G' is '%'.

70. (D)



71. (C) P @ 3 and V % 4

72. (B) 3 E N

73. (A) On reversing the first ten elements,

$ L % K M 5 I D T W 3 7 F E B # 1 G H A © @ J U V 2 4

11th element from the left is 3 and third element to the left of 3 is D.

74. (B) After dropping all the vowels,

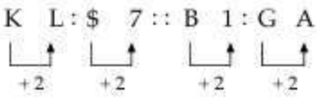
W T D 5 M K % L $ 3 7 F B # 1 G H © @ J V 2 4

13th element from the right is 7 and 5th element to the right of 7 is G.

75. (C) E and U

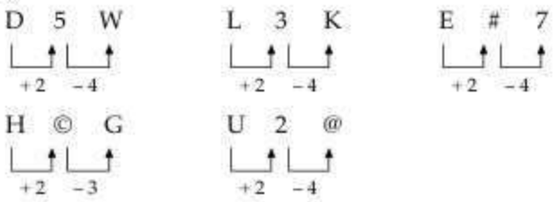
76. (E) Between % and G is F.

77. (A) K L : $ 7 :: B 1 : G A



78. (B) $ and #

79. (D)



80. (B) 3 8 4 6 9 5
↓ ↓ ↓ ↓ ↓ ↓
F # % $ E Q

81. (D) 5 8 4 6 3 2
↓ ↓ ↓ ↓ ↓ ↓
L # % $ F Q

According to I condition

82. (C) 4 3 1 0 6 8
↓ ↓ ↓ ↓ ↓ ↓
% F T @ $ %

According to II condition

83. (A) 8 0 3 2 7 9
↓ ↓ ↓ ↓ ↓ ↓
E @ F L W E

According to III condition

84. (E) 7 6 5 9 8 4
↓ ↓ ↓ ↓ ↓ ↓
% $ Q E # W

According to I condition

85. (D) 3 9 2 6 4 8 → A B L T D A

86. (C) 6 3 5 2 9 7 → X F K L B X

87. (B) 4 6 7 3 9 2 → L T R F B L

88. (B) 7 2 5 6 3 8 → A L K T F A

89. (B) 1 4 8 3 8 6 → A D H F R A

90. (E) 2 7 9 6 5 4 → D R B T K D

91. (C) 3 6 4 2 8 9 → F T D L H F

92. (A) 5 2 1 4 3 7 → K L G D F K

93. (C) 94. (E) 95. (B) 96. (A) 97. (C) 98. (D)

99. (E) 3$95#1 → YENADY

100. (C) 8%©3#5 → ARHFDA

101. (D) © 8143★$ → HIBJFPE

102. (B) 6%@9#3 → FRGNDF

103. (A) ★$6724 → JEVKTP

104. (B) 105. (B) 106. (D) 107. (A) 108. (A) 109. (E)

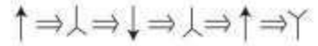
110. (E) The design rotates 180° from element I to element II of figure.

111. (E) The design rotates 90° clockwise and then reverses vertically in element II from element I of the figure.

112. (C) In element II of figure a new design comes outside of the design element I like this that inside design touches the design of outside.

113. (E) In element II of figure, the lower side design comes inside the upper side design similarly out of the two designs of element I.

114. (D) In element II of figure, the lower left part becomes shaded out of four equal part of the design of element I.



115. (E) In the element II of unlettered pair from the element I, the topmost triangle rotates 90° clockwise and the shaded part shifts to the rest of half part. The middle triangle rotates 90° anticlockwise and the shaded part remains at the same half part. The belowest triangle rotates 90° anticlockwise and the shaded part shifts to the rest of half part. So the similar change becomes in the answer figure (E) also.

116. (B) The designs of element I of the unlettered pair come in the element II taking changes as follows—

The shaded part inside of the circle rotates 90° anti-clockwise. The triangle rotates 90° anticlockwise and shaded part shifts to the rest of half part. The trapezium rotates 90° anticlockwise and the shaded part remains on the same place. The shaded part inside of square rotates 45° anticlockwise.

117. (C) In element II from the designs of element I of unlettered pair rotates 90° clockwise and the topmost design shifts at the second place from lower side and the designs of second and third place shift one by one place towards upper side.

118. (D) In element II from the design of element I of unlettered pair arrange three different types. First design reverses with two types horizontal and vertical both. The design at the second place or middle reverses with horizontal. The design at the third place reverses with vertical.

119. (A) The inside design of element I of unlettered pair reverses and one line disappears after reversing the lower rightside design and the design of lower right-side comes in element II becoming black, reversing on the lower leftside of the line.

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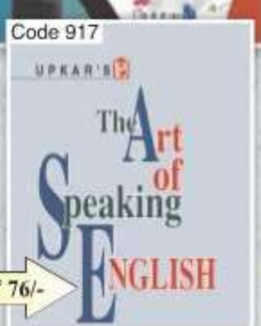

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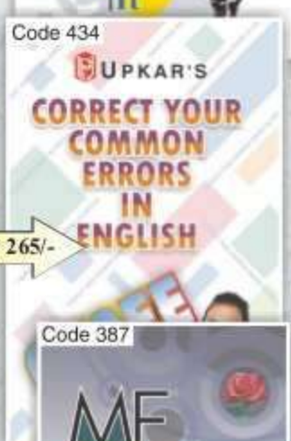

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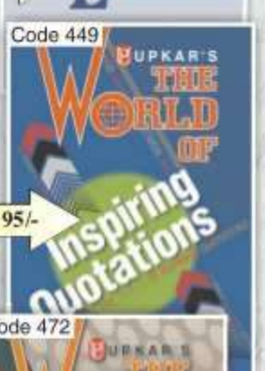

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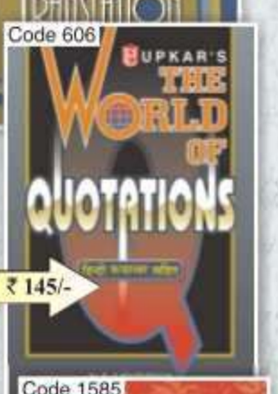

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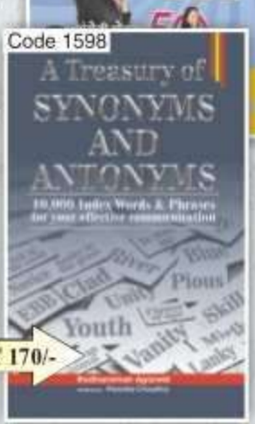

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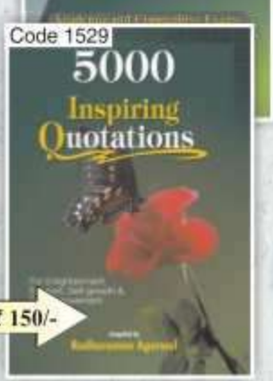

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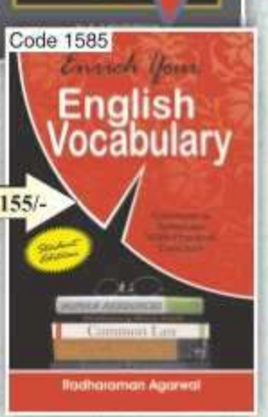

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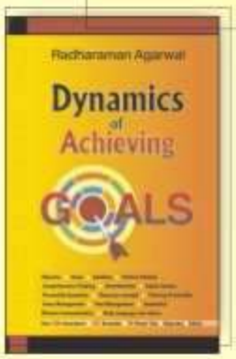

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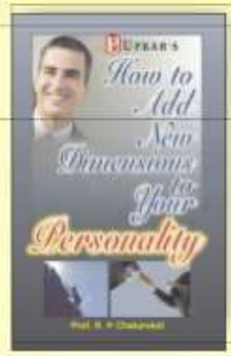

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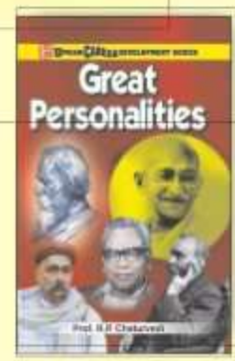

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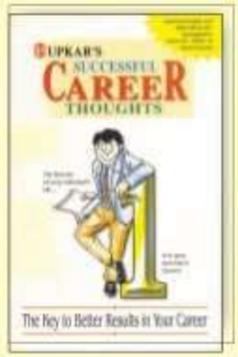

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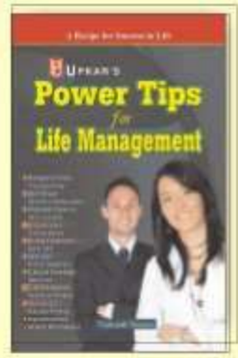

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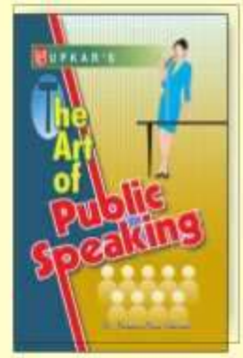

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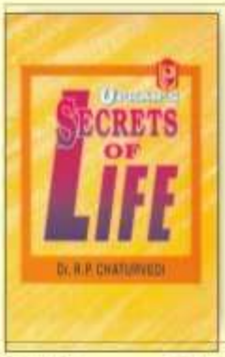

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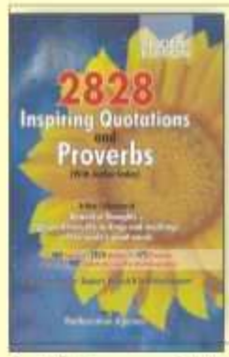

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