



DEPARTMENT OF EMPLOYMENT AND TRAINING

TNPSC GROUP II A MAINS - UNIT II

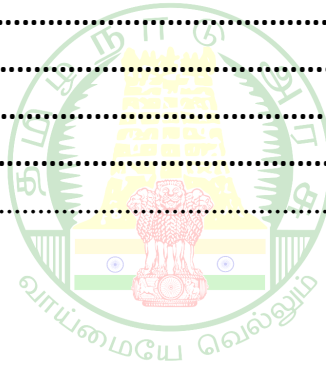
Course : TNPSC Group II A Mains Material

Subject : General Intelligence and Reasoning

Topic : Coding and Decoding

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Coding and Decoding

Coding - Hiding the Original
Decoding - Finding the Original

Coding:

Coding is a process in which a word or a series of numbers/ letters/ sentences are encrypted in a specific code or pattern designed based on a specific set of rules.

Decoding:

On the other hand, decoding is the opposite process that aims to decrypt a particular code into its original form based on finding a common pattern or structure.

Alphabet Series:

Order of the English Alphabet					
Forward order position	Letters	Backward order position	Forward order position	Letters	Backward order position
1	A	26	14	N	13
2	B	25	15	O	12
3	C	24	16	P	11
4	D	23	17	Q	10
5	E	22	18	R	9
6	F	21	19	S	8
7	G	20	20	T	7
8	H	19	21	U	6
9	I	18	22	V	5
10	J	17	23	W	4
11	K	16	24	X	3
12	L	15	25	Y	2
13	M	14	26	Z	1

Types of Coding:

Some important types of coding

1. Alphabet Coding
2. Numerical Coding
3. Symbol Based Coding
4. Letter-Symbol-Numerics (LSN) Coding
5. Chinese Coding
6. Substitution coding
7. Decipher Coding
8. Binary coding

Alphabet coding:

A group or series of Alphabets coded or encrypted in a certain rule or way by the help of some mathematical operations like addition, subtraction, multiplication, division etc....

Example:

"EXAM" is coded as **HADP**

Solution:

Here each letter skipped 2 letters from its original position and was replaced by the next letter.

E is skipped F and G, replaced by H. The Following letters also followed this rule.

- E → H
- X → A
- A → D
- M → P

Coded Word: "HADP"

Numerical coding:

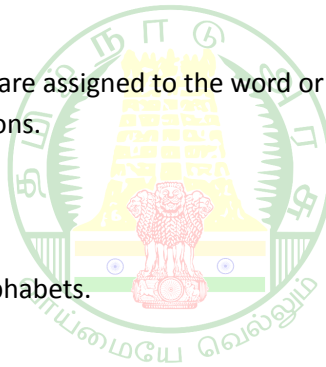
In this type of coding, some numbers are assigned to the word or letter. This is relation based on the place value of alphabets and other mathematical operations.

Example:

MANGO is coded as **13114712**

These numbers are the place values of the alphabets.

M - 13, A - 1, N - 14 G - 7, O - 12

**Symbol based coding:**

Symbol-Based Coding in logical reasoning involves using various symbols (like characters, shapes, or special characters) to represent words, letters, or numbers in a coded format. In symbol-based coding, each symbol typically represents a letter or a number, and candidates are required to decode the symbol patterns to retrieve the original information.

Example:

Code: **CAB** is coded as **\$@#**

- A = @
- B = #
- C = \$
- D = %

- Decode the word "CAB".
 - $C \rightarrow \$$
 - $A \rightarrow @$
 - $B \rightarrow \#$
- **Decoded Word:** "\$@#"

LSN Coding (Letters - Symbol - Numerics):

In these types of coding-decoding questions, the words are coded with symbols, numbers, letters, and operational signs. The reasoning behind the employment of letters, symbols, and numbers has to be deduced by the candidate.

Alphabet (A-Z, a-z): Letters in both upper and lower case.

Numbers (0-9): Digits are incorporated into the system.

Symbols (!, @, #, \$, %, etc.): Non-alphabetic characters are included as well.

Example:

- Plaintext: "HELLO"
- Encrypted: "1@MM0"

Here, H might be replaced with 1, E with @, L with M and O with 0.



Chinese Coding:

A few statements containing the same words but in a different order will be coded as words, symbols, or characters in this form of coding and decoding. Candidates must locate the codes of words by looking for common terms in several sentences, as the code of a word will be the same in both.

Example:

1. "Weather is good" is coded as "yin sue foi"
 "Good things happen" is coded as "sue mik teo"

Which code represents the word "Good"

- a. yin
- b. sue
- c. mik
- d. teo

Answer: b. Sue.

Explanation:

Good is placed in both sentences and the Chinese word sue is placed in both codes.

Substitution Coding:

In these kinds of questions, a coding pattern is employed where words are replaced by specific codes through a substitution method. Each word is assigned a unique artificial substitute, and the task for candidates is to decipher the pattern and apply it to determine the correct code for another word.

Example:

If Red is called as white, White is called black, Black is called as Green, Green is called yellow, then what is the color of milk?

- a. Red
- b. White
- c. Black
- d. Yellow

Answer: c. Black

Explanation:

Commonly the color of milk is white. But based on the above statement, the white is called as black. So the color of milk is coded as Black.

Decipher Coding:

In this type, A sentence or statement bearing a common code to denote it. We are required to identify the code from the common property of word/numeral and decipher the given codes with best alternatives.

Example:

“ **Wheels rotates fastly**” is written as “ **gi de hy**”

“ **Earth rotates itself**” is written as “ **uy jo gi**”

Which of the following does “gi” stands for?

- a. Fastly
- b. Earth
- c. Rotates
- d. Wheels

Answer : c. Rotates

Explanation:

Here gi stands for rotates. Because both words gi and rotates were placed in both statements.

Binary coding:

In these type of coding decoding reasoning questions, decimal numbers are coded by binary numbers such as 0 and 1

Decimal numbers : 0 to 9

Binary numbers : 0 to 1

Example:

In a certain code, the symbol for 0 is * and for 1 is Δ . There is no symbol for rest of the numbers. Numbers greater than 1 are needed to be depicted using the two given symbols. Left shifting of 1 doubles its value each time. Study the following example.

'0' is depicted as *

'1' is depicted as Δ

'2' is depicted as Δ^*

'3' is depicted as $\Delta\Delta$

'4' is depicted as Δ^{**} and so on

Which of the following codes will give an odd number as the result after being decoded?

- a. $\Delta\Delta\Delta\Delta\Delta\Delta$
- b. Δ^{*****}
- c. $\Delta^*\Delta^*\Delta^*\Delta^*$
- d. $\Delta^{**}\Delta^*$

Answer: a. $\Delta\Delta\Delta\Delta\Delta\Delta$

Explanation:

Since 1 is depicted as Δ , the code which will end with Δ will give odd numbers as a result, So the answer is option a.

$$\Delta\Delta\Delta\Delta\Delta\Delta = 1+1+1+1+1+1 = 7. \quad 7 \text{ is odd number.}$$

Variety of Questions:

1. If GREEN is written as HSFFO in a certain code. How is BLACK is written in that code?
 - a. AKZBJ
 - b. CMBDL
 - c. AMBDJ
 - d. CKZBL

Answer: b. CMBDL

Explanation:

Every letter is replaced by the next letter in the alphabet series.

G-H, R-S, E-F, N-O

B-C, L-M, A-B, C-D, K-L

2. If in a certain code, TEACHER is written as T21CH2R, how would BOARD be written in the same code?

- a. B41RD
- b. B34RD
- c. B12RD
- d. B53RD

Answer: a. B41RD

Explanation:

Here, The vowels are replaced with its place value in the vowels series.

A - 1, E-2, I-3, O-4, U-5.

3. If the letters in LETTER is coded as 257753 and DONKEY is coded as 409158. Then how can DOLLER to be coded?

- a. 405523
- b. 403352
- c. 402253
- d. 407752

Answer: c. 402253

Explanation:

Here, is not any defined pattern. Letters are coded with some numbers without any rule. Based on the given words and numbers, the answer will be found.

D - 4, O - 0, L - 2, E - 5, R - 3.

4. If CAR is called BUS, BUS is called TEMPO, TEMPO is called LORRY and LORRY is called SCOOTY, on what would be a public transport?

- a. BUS
- b. SCOOTY
- c. LORRY
- d. TEMPO

Answer : d. TEMPO

Explanation:

Here, the vehicles are given. Generally buses are used as one form of public transport. Based on the above conditions, the bus is coded as TEMPO. So, the answer is TEMPO.



5. In a certain code language, if the value of 'SANTRO' = 14 and 'OFFICE' = 15, then what is the value of the word 'WARRIOR'?

- a. 15
- b. 17
- c. 18
- d. 13

Answer: b. 17

Explanation:

SANTRO: 6 Letters (4 consonants and 2 vowels)

$(6 \times 2) + 2 = 12 + 2 = 14$.

OFFICE: 6 letters (3 consonants and 3 vowels)

$(6 \times 2) + 3 = 12 + 3 = 15$.

WARRIOR: 7 Letters (4 consonants and 3 vowels)

$(7 \times 2) + 3 = 14 + 3 = 17$.

6. If 'DEVELOPMENT' is coded as ' 'WEEEOOKMVNG', then 'HIGHWAY' is coded as

- a. HRGHDZY
- b. GTSHVBZ
- c. JSTJGIR
- d. SITHDAB

Answer : d. SITHDAB

Explanation:

The odd place letters are replaced by its opposite words.

W is opposite to D

Similarly, V- E, L- O, P- K, E-V, T- G.

Similarly, H - S, G-T, W-D, Y- B

7. If " MAID" is coded as "\$+#@" and "DEAR" is coded as "@*+?" then "DAMER" is coded as

- a. @+\$*?
- b. *?+\$@
- c. \$?@*+
- d. +@*?\$

Answer : a. @+\$*?

Explanation:

D - @, A - +, M - \$, E - *, R - ?

8. The word 'WATER' is coded as 'XZGFQ'. Then find the code for 'JUPITER'

- a. IVKJFTS
- b. KTKJSVS
- c. KVKHUTS
- d. ITKHFVS

Answer : b. KTKJSVS

Explanation:

First, 4th and 7th letters are replaced with the next letter.

2nd and 5th letters are replaced with previous letters.

3rd and 6th letters are replaced with opposite letters.

K is next letter of J

T is the Previous letter for U

K is opposite letter for P

Similarly, I - J, T - S, E - V, R - S

9. In a certain code language, 'Fruits are ripen' is coded as '684', 'Fruits is sweet' is coded as '473', 'Sweet get more' is coded as '302'. Then 4 is used to

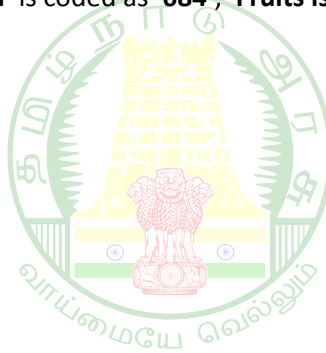
- a. sweet
- b. More
- c. Fruits
- d. Are

Answer : c. Fruits

Explanation:

Fruits - 4

Sweet - 3



10. "Food is hot" is written as "ui oe fy", "Dog eats food" is written as "de oe sa" and "Ramu eats well" is written as "sa je ne". Then find the code for the word "eats"

- a. de
- b. oe
- c. sa
- d. je

Answer : c. sa

Explanation:

Food - oe, eats - sa. Others are cannot explained clearly

11. In a certain code, the symbol for 0 (zero) is Δ and for 1 is +. There is no symbol for the rest of the numbers. Numbers greater than 1 are needed to be written using the two given symbols. Left shifting of 1 doubles its value each time. Study the following example.

'0' is written as Δ

'1' is written as +

'2' is written as + Δ

'3' is written as ++

'4' is written as + Δ Δ and so on.

The symbol arrangement ++ Δ Δ + Δ represents which of the following numbers?

- a. 28
- b. 48
- c. 26
- d. 50

Answer: d. 50

Explanation:

+	+	Δ	Δ	+	Δ
32	16	8	4	2	1

Now since Δ is the code for 0. Therefore, ignore all the values written below Δ . Thus ++ Δ Δ + Δ = 32 + 16 + 2 = 50

12. In a certain code language, "SEMINAR" is written as "J59" and "TRAVELS" is written as "W58". Then "BRIDGES" is written as

- a. E51
- b. E53
- c. E55
- d. E57

Answer : a. E51

Explanation:

SEMINAR:

J - I = Next letter to the middle letter of the word.

Numerical Value = (No of letters) x 7 + No of Vowels = 7 x 7 + 3 = 49 + 3 = 52

BRIDGES:

Next letter to D is E

Total letters = 7

No. of vowels = 2

Numeric value = 7 x 7 + 2 = 51

Answer : E51

13. In a certain code language “904” is coded as “&#%”, “653” is coded as “+/\$” and “471” is coded as “?*&”. Then the number 4 is coded as

- a. #
- b. ?
- c. &
- d. %

Answer: c. &

Explanation:

4 only repeated 2 times and & is also repeated 2 times.

14. In a certain code language “WAKEFIT” is coded as “KAWETIF”. Then “MAVERIC” is coded as

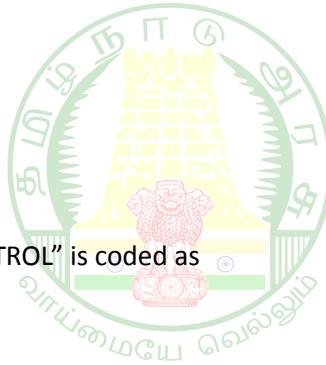
- a. MVAEIRC
- b. VAMECIR
- c. MAEVRIC
- d. AVMECIR

Answer: b. VAMECIR

Explanation:

wakefit - kaw - e - tif

maveric - vam - e - cir



15. If “LAKHS” is coded as “OXNEV”, then “PETROL” is coded as

- a. SBWORI
- b. MBZUKR
- c. SDWOKO
- d. MBWUKR

Answer: a. SBWORI

Explanation:

Odd place letters are 3 places forward moves

Even place letters are 3 places backward moves

L - O, A - X, K - N, H - E, S - V, Similarly, PETROL is coded as SBWORI

16. If RAT is called as BAT, BAT is called as CAT, CAT is called as VAT. VAT is called as SAT. Then which is the pet animal?

- a. RAT
- b. CAT
- c. VAT
- d. SAT

Answer: c. VAT

Explanation:

Basically CAT is the pet animal. But According to the above conditions CAT is called as VAT.

17. If “**LAKE VIEW APARTMENT**” is coded as “**hue rit qus**”, “**RAM LIVES IN APARTMENT**” is coded as “**jes ino rit fue**” and “**RAM HAS CAR**” is coded as “**fue yuo sae**”. Then the code for APARTMENT is

- a. hue
- b. rit
- c. qus
- d. fue

Answer: b. rit

Explanation:

Based on first and second statements, Apartment is denoted as rit.

18. In a certain code language, “**CINEMA**” is coded as **49** and “**LIGHT**” is coded as **36** then “**DETAILS**” is coded as

- a. 49
- b. 64
- c. 42
- d. 68

Answer: b. 64

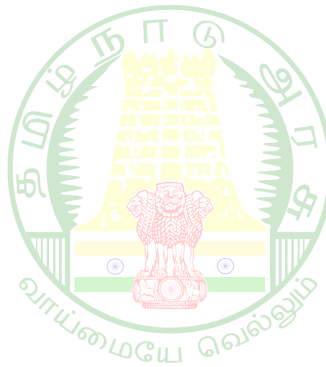
Explanation:

cinema:

6 letters - $6+1 = 7 : 7 \times 7 = 49$

Light: 5 letters- $5+1 = 6 : 6 \times 6 = 36$

Details: 7 letters = $7+1 = 8 : 8 \times 8 = 64$.



19. In a certain code language **COMPUTER** is written as **RFUVQNPC**. How will **MEDICINE** be written in that code language?

- a. EOJDJEFM
- b. EODJEFJM
- c. MJEJFDOE
- d. MFJEJDOE

Answer: a. EOJDJEFM

Explanation:

There are 8 letters in the word.

The coded word can be obtained by taking the immediately following letters of word, except the first and the last letters of the given word but in the reverse order.

COMPUTER - CPNQVUFR

It was written reversely, RFUVQNPC

Similarly, MEDICINE - MFEJDJOE , MEDICINE - EOJDJEFM

20. In a certain code language, '2a, 3b, 4c' means 'Truth alone triumph';
 '5c, 3b, 7b' means 'Always speak truth' and
 '9a, 4d, 3b, 8b' means 'Truth does not perish'.

Which of the following means 'Truth' in that language ?

- a. 8b
- b. 4b
- c. 3b
- d. 7b

Answer: c. 3b

Explanation:

Based on above conditions truth is coded as 3b.

21. If "ROJA" is code as **9121726** and "KING" is coded as **16181320**, then "LORD" is coed as

- a. 1215184
- b. 1215923
- c. 1512184
- d. 1512923

Answer: d. 1512923

Explanation:

Each letter contains the opposite letter's place values.

22. If **X = 48**, **CAN = 36**, then **RAN** is coded as

- a. 66
- b. 68
- c. 64
- d. 62

Answer: a. 66

Explanation:

Each letter of the words, the place values are multiplied with 2 and added all.

$$R = 18 \times 2 = 36, A = 1 \times 2 = 2, N = 14 \times 2 = 28$$

$$RAN = 36 + 2 + 28 = 66$$

23. In a code language, A is written as B, B is written as C, C is written as D and so on, then how will "GREAT" be written in that code language ?

- a. FQDZS
- b. HSFBU
- c. GSFZS
- d. FSDBS

Answer: b. HSFBU

Explanation:

Each letter of the word is replaced with the next letters.

G - H, R - S, E - F, A - B, T - U. GREAT - HSFBU

24. If "GATE" is coded as "9632" and "TERM" is coded as "1275" then "GAME" is coded as

- a. 9673
- b. 5693
- c. 9652
- d. 1652

Answer: c. 9653

Explanation:

There is no specific rule.

Based on conditions, G-9, A-6, M-5, E-2.

25. If “Land” is coded as 1, “Hero” is coded as 2 and “Mango” is coded as 2. Then “Quite” is coded as

- a. 1
- b. 2
- c. 3
- d. 4

Answer: c. 3.

Explanation:

Each number is no of vowels in each word.

Land - 1 vowel (a)

Hero - 2 vowels (e, o)

Mango - 2 (a, o)

Quite - 3 (u, i, e)

Practice Questions:

1. In a certain code “LION” is written as “MKRR”. How is “TIGER” is written in that code?

- a. UKJIW
- b. VKIKU
- c. UHECA
- d. VHJIW

2. In a certain code “FANTA” is written as “LGTZG”. How is “CRICKET” is written in that code?

- a. IXOIQKZ
- b. ZKQIOXI
- c. NSKLIEA
- d. ANEILKSN

3. In certain code language,

'851' means 'good sweet water';

'783' means 'good white horse'

'349' means 'horse and jockey'.

Which of the following digits stands for 'horse' in that language?

- a. 5
- b. 8
- c. 1
- d. 3

4. In certain code language,

'Tom Kun Sud' means "Vehicles are parked";

'Kun Jon Mea Mop' means ' Vehicles in good condition'

'Mut Tom Kun' means 'Vehicles are sold'.

Which word in that language means 'Vehicles'?

- a. Tom
- b. Jon
- c. Kun
- d. Sud

5. In a code language, A is written as C, B is written as D, C is written as E and so on, then how will ENGLISH be written in that code language ?

- a. GPINKUJ
- b. FOHKJTI
- c. DMFJHRG
- d. EMGKJSI

6. If F = 21, K=16, and TO = 712 then KITE is coded as

- a. 1118750
- b. 1618722
- c. 1192050
- d. 2218205

7. If Chair is coded as 10, Details is coded as 14, then Tomorrow is coded as

- a. 8
- b. 12
- c. 16
- d. 24



8. In a certain code language, '789' is written as '&\$#' , '654' ✓ ^¥, and '258' is coded as '#^?', then 2 is coded as

- a. ✓
- b. ^
- c. ?
- d. &

9. If Rain called as water, water is called as tank, tank is called as river, river is called as ocean. The source of purest form water is

- a. Rain
- b. Water
- c. River
- d. Tank

10. In a certain code language, A is written as B, B is written as Z, and C is written as F, then CAB is coded as

- a. DYC
- b. BCA
- c. CEF
- d. FBZ

11. If DEER is coded as 2, HOUSES is coded as 3, Then INTELLIGENT is coded as

- a. 5
- b. 4
- c. 6
- d. 3

12. If MAN coded 3, FEMALE is coded 6 then MAPLE is coded as

- a. 3
- b. 5
- c. 4
- d. 6

13. If FASTAG is coded as GATSAF and NUMBER is coded as REBMUN, then FABRICS is coded as

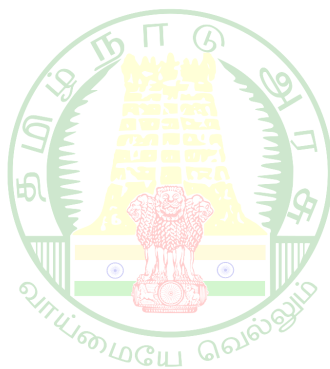
- a. SARBSCF
- b. AFRBICS
- c. SCIRBAF
- d. ABRISCF

14. If EXCEL is coded as XECLE, then LARGE is coded as

- a. AKRGE
- b. ALREG
- c. EGRAL
- d. GERLA

15. If Man is coded as female, female is coded as mother, mother is coded as son, son is coded as cousin, cousin is coded as daughter. Then How you are called as wife of your father?

- a. Mother
- b. Son
- c. Female
- d. Cousin



Answers:

Q.No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans	a	a	d	c	a	b	c	c	b	d	b	b	c	b	b

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