

## Coding-Decoding

Coding is a method of transmitting a message between the sender and the receiver that no third person can understand it. The coding and decoding one's ability of deciphering the rule and breaking the code to decipher the message will be tested to know.

### Approach:

- 1) Observe alphabets or numbers given in the code keenly.
- 2) Find the sequence it follows whether it is ascending or descending.
- 3) Detect the rule in which the alphabets/numbers/words follow.
- 4) Fill the appropriate letter/number/word in the blank given.

**Letter coding:** Alphabets in a word are replaced by other alphabets according to a specific rule to know its code. So the common rule should be detected first. Some examples are given below:

1) 'ZYXW' as coded as 'ABCD' then 'STUV' is coded as.....

Answer: Z - A, Y - B, X - C, W - D

V - E, U - F, T - G, S - H

STUV = HGFE

Answer = HGFE

Rule = front alphabet = back alphabet.

2) 'bcd' is coded as 'def' then 'True' is coded as.....

Answer: b - d (+2)

c - e (+2)

d - f (+2)

+2 letters are considered in this code.

True - Vtwg

Answer = Vtwg.

3) 'Hyderabad' is coded as 'Ixedszcze' then 'Chennai' is coded as.....

Answer: H - I (+1)

Y - X (1-)

D - E (1+)

E - D (1-)

R - S (1+)

A - Z (1-)

B - C (1+)

A - Z (1-)

D - E (1+)

Here if we observe alternatively the letter increasing and one letter decreasing.

Chennai = dgfmzj

Answer = dgfmzj

**Number coding:** In this each alphabets or words are assigned to the numeric values we should observe the given letters and the assigned values and use the same rule to find the value to of given code.

Some examples are given below:

1) Apple is coded as 25563, Rung is coded as 7148. Then purple is coded as

Answer:

A P P L E

| | | | |

2 5 5 6 3

R U N G

| | | |

7 1 4 8

PURPLE – 517563  
Answer = 517563.

2) In a language A is coded as 1, B is coded as 2, ..... then FACE is coded as

Answer:

A	B	C	D	E	F	G	H	I
1	2	3	4	5	6	7	8	9

Then FACE = 6135  
Answer = 6135.

3) PUSH is coded as 1234, ROUGH is coded as 65274. Then SOUP is coded as

Answer:

P - 1	R - 6
U - 2	O - 5
S - 3	U - 2
H - 4	G - 7
	H - 4

SOUP = 3521  
Answer = 3521.

**Substitution:** In this section an object names are substituted with different object names. We should carefully trace the substitution and answer given question. Some examples are given below:

1) 'book' is coded as 'pencil', 'pencil' is coded as 'mirror', 'mirror' is coded as 'book'. Then what is useful to write on a paper?

Answer: Pencil is coded as mirror  
Answer = mirror.

2) 'man' is coded as 'woman', 'woman' is coded as 'girl', 'girl' is coded as 'boy', 'boy' is coded as 'worker' then 6 years female is known as?

Answer: 6 years female = girl, but 'girl' is coded as 'boy'.  
Answer = boy.

3) 'Reds' are 'blues', 'blues' are 'whites', 'whites' are 'yellows', 'yellows' are 'oranges', 'oranges' are 'pinks', then what is the colour of the sky?

Answer: Sky is blue, but blues are whites  
Answer = white.

Exercise questions

1. In a certain code, COMPUTER is written as RFUVQNPC. How is MEDICINE written in the same code ?

- a) MFEDJJOE
- b) EOJDEJFM
- c) MFEJDJOE
- d) EOJDJEFM

Ans: Option d

The letters of the word are written in reverse order and expect the first and the last letter all other letters are move one step forward

2. 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 SMART be written in that code language ?

- a) TLBSU
- b) SHBSU
- c) TNBSU
- d) SNBRU

Ans: Option c

The letters are coded by moving them 1 step forward.

3. In a certain code, RIPPLE is written as 613382 and LIFE is written as 8192. How is PILLER written in that code?

- a) 318826
- b) 776655
- c) 786543
- d) 156724

Ans: Option a:

Word : R I P P L E L I F E P I L L E R

Code : 6 1 3 3 8 2 8 1 9 2 3 1 8 8 2 6

4. In a certain code FLOWER is coded as 36 and SUNFLOWER is coded as 81, then how to code FOLLOWS?

- a) 42
- b) 49
- c) 63
- d) 36

Ans: Option b

The word FLOWER has 6 letters. 62 is 36

The word SUNFLOWER has 9 letters. 92 is 81

Like FOLLOWS has 7 letters. So 72 is 49

5. In a certain code, 'il be pee' means 'roses are blue', 'sik hee' means 'red flowers' and 'pee mit hee' means 'flowers are vegetables', How is 'red' written in that code?

- a) hee
- b) sik
- c) be
- d) cannot be determined
- e) none

Ans: Option b

Code Sentence

Il be pee roses are blue

Sik hee red flowers

Pee mit hee flowers are vegetables

In II and III code 'hee' stands for 'flowers'. So 'sik' stands for 'red'

6. In a certain code language : 'dugo hui mul zo' stands for 'work is very hard' 'hui dugo ba ki' for 'Bingo is very smart'; 'nano mul dugo' for 'cake is hard'; and 'mul ki gu' for 'smart and hard' Which of the following word stand for Bingo ?

- a) Jalu
- b) Dugo
- c) Ki
- d) Ba

Ans: Option d

Code Sentence

- 1.dugo hui mul zo work is very hard
- 2.hui dugo ba ki bingo is very smart
- 3.nano mul dugo cake is hard
- 4.mul ki gu smart and hard

From second code and its sentence neither 'ba' is repeated nor is 'Bingo'.

7.If rain is called water, water is called air, air is called cloud, cloud is called sky, sky is called sea, sea is called road, where do the aeroplanes fly ?

- a) Water
- b) Road
- c) Sea
- d) Cloud

Ans: Option c

Aeroplanes fly in sky and as per given codes sky is sea

8.If Orange is called Lemon, Lemon is called Flower, Flower is called Fish, Fish is called Tail and Tail is called Pen, what is Rose ?

- a) Pen
- b) Lemon
- c) Flower
- d) Fish

Ans: Option d

Rose is a flower and as per given codes flower is fish.

9.In a certain code language \$#\* means 'Shirt is clean', @ D# means 'Clean and neat' and @ ? means 'neat boy', then what is the code for 'and' in that language

- a) #
- b) D
- c) @
- d) Data inadequate

Ans: Option b

Code sentence

\$#\* 'Shirt is clean',

@ D# 'Clean and neat'

@ ? 'neat boy'

Here # stands for clean and @ stands for neat. D stands for 'and'

10.If A stands for +, B stands for -, C stands for x, what is the value of (10C4)(A) (4C4)B6 ?

- a) 60
- b) 50
- c) 56
- d) 46

Ans: Option b

$(10C4)(A) (4C4)B6 = (10 * 4) + (4*4) -6 = 50$

1. In a certain code language if the word 'MUSEUM' is coded as 'LSPAPG', then how will the word 'PALACE' be coded in that language?

- a. OYIWX Y
- b. OYIX YW
- c. IYXYWO
- d. YXWYOI

2. If DELHI is coded as 73541 and CALCUTTA as 82589662, how can CALICUT be coded?

- a. 5279431
  - b. 5978213
  - c. 8251896
  - d. 8543691
3. In a certain code language, if the number 1 is assigned to all the letters in odd numbered places in the alphabet and the remaining letters are assigned the number 2, then what is the code for the word 'DANCE'?
- a. 21211
  - b. 12121
  - c. 22111
  - d. 21121
4. In a certain code language, if the value of CONTRACT = 56 and 'GROWTH' = 30, then what is the value of DISTRIBUTION?
- a. 130
  - b. 132
  - c. 140
  - d. 142
5. In a certain code language, if the value of 'BLOCK' = 13 and 'CURTAIN' = 27, then what is the value of the word 'SCIENCE'?
- a. 32
  - b. 36
  - c. 38
  - d. 34
6. In a certain code language, if the word 'DISTANCE' is coded as EDCINSAT, then how will you code 'ACQUIRE' in that language?
- a. EACIQUR
  - b. EACRIUQ
  - c. ERCIAQU
  - d. EARCIQU
7. In a certain code language, if the value of  $28 + 14 = 50$  and  $36 + 43 = 63$ , then what is the value of  $44 + 52 = ?$
- a. 54
  - b. 56
  - c. 58
  - d. 62
8. In a certain code language, if the value of  $14 \times 15 = 25$  and  $26 \times 42 = 64$ , then what is the value of  $73 \times 31 = ?$
- a. 100

- b. 110
- c. 90
- d. 120

9. In a certain code language, 'kew xas huma deko' means 'she is eating apples'; 'kew tepo qua' means 'she sells toys' and 'sul lim deko' means 'I like apples'. Which word in that language means 'she' and 'apples'?

- a. xas & deko
- b. xas & kew
- c. kew & deko
- d. kew & xas

10. These questions are based on a certain code language. Understand the logic in the coding and answer the following questions.

PROCESSOR is coded as D4F3C5C1E1S1S1E3C6

a. QUADRANT

- Q1C7A1B2F6A1B7E4
- Q1D6A1B2F3A1B7E4
- Q1C7A1B2F3A1B7E4
- Q1C7A1D2C6A1B7E5

b. WINDOW

- W1E4B7B2E3W1
- W1C3B7B2E3W1
- W1C3B7B2C3W1
- W1C3G7B2E3W1

### Answer & Explanations

1. Exp: Word: M    U    S    E    U    M  
 Logic: -1   -2   -3   -4   -5   -6  
 Code: L    S    P    A    P    G

Similarly, the code for PALACE is

Word: P    A    L    A    C    E  
 Logic: -1   -2   -3   -4   -5   -6  
 Code: O    Y    I    W    X    Y

2. Exp: The alphabets are coded as follows:

D E L H I C A U T  
 7 3 5 4 1 8 2 9 6

So, in CALICUT, C is coded as 8, A as 2, L as 5, U as 9 and T as 6. Thus, the code for CALICUT is 8251896.

3. Exp: The code for the word DANCE is 21211.

4. Exp: Number of letters in the word CONTRACT = 8 and  $8 \times 7 = 56$ .

Number of letters in the word GROWTH = 6 and  $6 \times 5 = 30$ .

Similarly, DISTRIBUTION  $\Rightarrow 12$  and  $12 \times 11 = 132$ .

5. Exp: In this product of the digits in the place-values of the letters as per the alphabet is obtained first and then added i.e, BLOCK

$\Rightarrow B = 2$

$L = 12 \Rightarrow 1 \times 2 = 2$

$O = 15 \Rightarrow 1 \times 5 = 5$

$C = 3$

$K = 11 \Rightarrow 1 \times 1 = 1$

Now  $(2 + 2 + 5 + 3 + 1) = 13$ .

So, BLOCK = 13.

Similarly, SCIENCE = 38.

6. Exp: In this coding, the letters from either end of the word are written, first a letter from the right end and then a letter from the left end of the word and so on. Hence DISTANCE is coded as EDCINSAT.

Similarly, ACQUIRE is coded as EARCIQU.

7. Exp: It is given that  $28 + 14 = 50 \Rightarrow (2 + 8) \times (1 + 4)$

$\Rightarrow 10 \times 5 = 50$  and  $36 + 43 = 63 \Rightarrow (3 + 6) \times (4 + 3)$

$\Rightarrow 9 \times 7 = 63$  then  $44 + 52 \Rightarrow (4 + 4) \times (5 + 2) \Rightarrow 8 \times 7 = 56$ .

8. Exp:  $14 \times 15 = 14 + 15 = 29$  and  $29 - 4 = 25$ .

$26 \times 42 = 26 + 42 = 68$  and  $68 - 4 = 64$ .

Similarly,  $73 \times 31 = (73 + 31) - 4 = 104 - 4 = 100$ .

9. Exp: In the first and second statements, the common code word is 'kew' and the common word is 'she'. So, 'kew' stands for 'she'.

In the first and third statements, the common code word is 'deko' and the common word is 'apples'. So, 'deko' stands for 'apples'.

10. a. Exp: PROCESSOR  $\Rightarrow$

$P = 16$  and  $D4 \Rightarrow 4 \times 4 = 16 = P$

$R = 18$  and  $F3 \Rightarrow 6 \times 3 = 18 = R$

$O = 15$  and  $C5 \Rightarrow 3 \times 5 = 15 = O$  and so on.

Hence, PROFESSOR is coded as D4F3C5C1E1S1S1E3C6.

QUADRANT is coded as Q1C7A1B2F3A1B7E4.

b. Exp: WINDOW is coded as W1C3B7B2E3W1.