# 4 CODING-DECODING

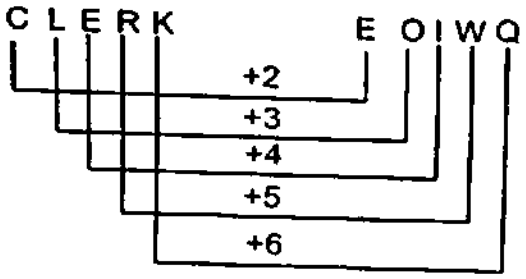
**CODING-DECODING :-** Coding–Decoding is a secret language, which is used to change the representation of the actual terms or value of given words/letters/digits. The language of coding–decoding can be of different types.

**Example (1)** In a certain language CLERK is written as EOIWQ. How is TABLE written in that code?

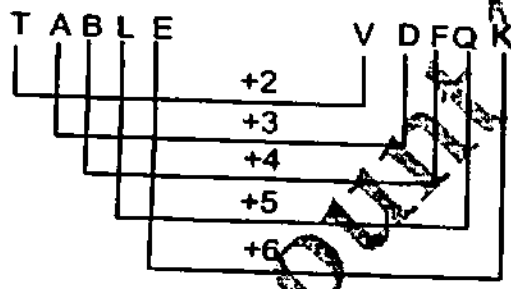
(1) VCDNG (2) VCDGN

(3) VDFQK (4) VDFOK

**Sol. (3):**




Similarly,

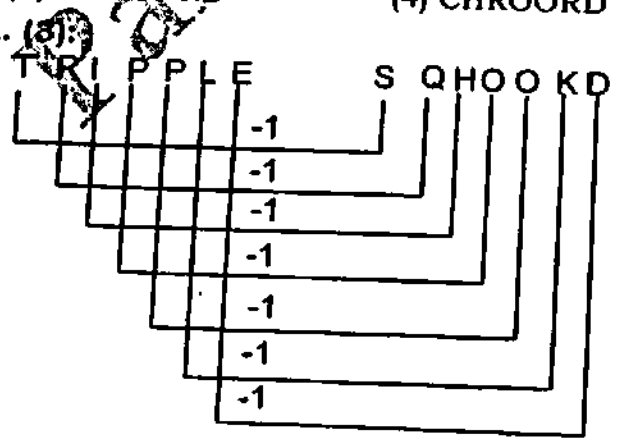



**Example (2)** In a certain language TRIPPLE is written as SQHOOKD. How is DISPOSE written in that code?

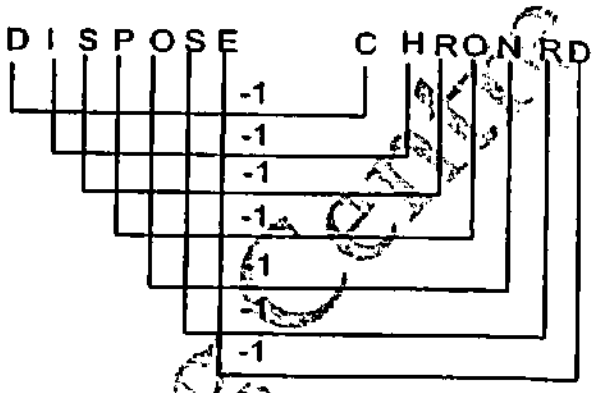
(1) CHROMRD (2) CHROMSD

(3) CHRONRD (4) CHROORD

**Sol. (3):**




Similarly,

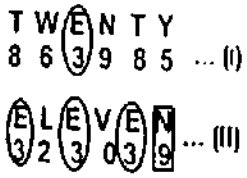



**Example (3)** In a certain language TWENTY is written as 863985 and ELEVEN is written as 323039. How is TWELVE written in that code?

(1) 863230 (2) 863303

(3) 836203 (4) 863203

**Sol. (4):**



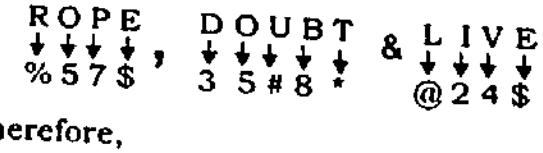

Here, according to equation (I) and (III), two letters E and N are common and the place value of E and N is 3 and 9. So the place value of other letters will be as follow : T = 8, W = 6, E = 3, N = 9, T = 8, Y = 5, L = 2, V = 0. Then, TWELVE = 863203.

**Example (4)** In a certain language ROPE is written as %57$, DOUBT is written as 35#8* and LIVE is written as @24$. How is TROUBLE written in that code?

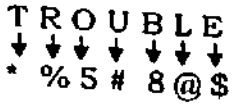
(1) *%5#8@$ (2) *%#58@$

(3) *%5#8@4 (4) *%#58$@

**Sol. (1):**




Therefore,



**Example (5)** In a certain language 'tom kun sud' means 'dogs are barking', 'kun jo mop' means 'dogs and horses' and 'mut tom ko' means 'donkeys are mad', Which word in that language means 'barking'?

(1) sud (2) kun
(3) hi (4) tom

**Sol. (1):** In the first and second statements, the common code-word is 'kun' and the common word is 'dogs'. So 'kun' means 'dogs'.

In first and third statements, the common code-word is 'tom' and the common word is 'are'. So, 'tom' means 'are'. Thus in the first statement, 'sud' means 'barking'.

**Example (6)** If 'cages' are called 'rockets', 'rockets' are called 'traps', 'traps' are called 'planets', 'planets' are called 'aeroplanes', 'aeroplanes' are called 'cycles' and 'cycles' are called 'cars', what is Earth?

(1) cycles (2) rockets
(3) planet (4) aeroplanes

**Sol. (4):** Earth is a 'planet' and here 'planets' are called 'aeroplanes'. So 'earth' will be called aeroplane.

**Example (7)** In each question below is given a group of letters followed by four combinations of digits/symbols numbered (a), (b), (3) and (d). You have to find out which of the combinations correctly represents the group of letters based on the following letter coding system and mark the number of that combination as the answer.

Letter : D L E G Z K R U B W F H I A P
Digit/symbol: 4 8 $ 1 # 5 7 © 2 6 % * 3 9 @

**Conditions:**

(i) If the first letter is a vowel and the last is a consonant both are to be coded as the code of the consonant.

(ii) If both first and the last letters are consonants, both are to be coded '$\delta$'

(iii) If first letter is a consonant and last is a vowel the codes for first and last letters are to be interchanged.

(i) ELBGPU (1) $821@© (2) ©821@$
(3) $821©@ (4) $812@©

(ii) UHRKLZ (1) ©*758© (2) ©*758#
(3) #*758# (4) $%3462

(iii) BFIDWE (1) 2%346$ (2) %3426$
(3) $%3426 (4) $2%634

(iv)- WKGLBA (1) 951862 (2) 651829
(3) 651892 (4) 951826

(v) ZEFHIR (1) #$%*37 (2) $\delta$$%*3$\delta$
(3) 7$%*3# (4) #%$*37

**Sol 7(i)-(1):**

| E | L | B | G | P | U |
|---|---|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| $ | 8 | 2 | 1 | @ | © |

Here, Condition (I) follows.

**(ii)-(3):**

| U | H | R | K | L | Z |
|---|---|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| # | * | 7 | 5 | 8 | # |

Here, Condition (I) follows.

**(iii)-(4):**

| B | F | I | D | W | E |
|---|---|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| $ | % | 3 | 4 | 6 | 2 |

Here, Condition (III) follows.

**(iv)-(4):**

| W | K | G | L | B | A |
|---|---|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| 9 | 5 | 1 | 8 | 2 | 6 |

Here, Condition (III) follows.

**(v)-(2):**

| Z | E | F | H | I | R |
|---|---|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| $\delta$ | $ | % | * | 3 | $\delta$ |

Here, Condition (II) follows.

**Exercise:**

1. In a certain code, TERMINAL is written as SDQLJOBM. How is CREDIBLE written in that code?
(1) BQDCJCMF (2) DSFEJCMF
(3) BQDCHAKD (4) DSFEHAKD
(5) None of these

2. In a certain code language LABOUR is written as KBAPTS. How is CANDID written in that code language?
(1) DBOEJE (2) DZOCJC
(3) BBMCHC (4) BBMEHE
(5) None of these

3. In a certain code language CONSUMER is written as ERUMNSCO. How will TRIANGLE be written in that code language?
(1) LENGIATR (2) ELNGIATR
(3) LEGNIATR (4) LEGNAITR
(5) None of these

4. In a certain code language BREAKDOWN is written as NWODKAERB. How will TRIANGLES be written in that code language?
(1) AIRTGNSEL (2) SELGNTRIA
(3) AIRTNSELO (4) SELGNAIRT
(5) None of these

5. In a certain code language 'BREAK' is written as 51342 and KITE is written as 2796. How will RIB be written in that code language ?

(1) 175 (2) 176 (3) 185
(4) 135 (5) None of these

6. In a certain code, 'SPRING' is written as '#2%@4=' and 'GONE' is written as '=74©'. How would 'SIGN' be written in the same code?

(1) #@4= (2) 2@=4 (3) #@=4
(4) #%=4 (5) None of these

7. In a certain code FIGHT is written as '39%@4' and TEARS is written as '458©*'. How is STAGE written in that code?

(1) *4835 (2) *48%5 (3) *84%5
(4) *48@5 (5) None of these

8. 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?

(1) da (2) ta (3) sa
(4) Data inadequate (5) None of these

9. In a certain code language 'si po re' means 'book is thick', 'ti na re' means 'bag is heavy', 'ka si' means 'interesting book' and 'de ti' means 'that bag'. What should stand for 'that is interesting' in that code language?

(1) ka re na (2) de si re
(3) ti po ka (4) de re ka
(5) None of these

10. If 'black' is called 'red', 'red' is called 'white', 'white' is called 'brown', 'brown' is called 'yellow', 'yellow' is called 'blue' and 'blue' is called 'green', then what is the colour of milk?

(1) blue (2) green (3) white
(4) red (5) None of these

11. If 'green' is called 'white', 'white' is called 'yellow', 'yellow' is called 'blue', 'blue' is called 'pink' and 'pink' is called 'black', then what is the colour of milk?

(1) green (2) blue (3) pink
(4) yellow (5) None of these

**Directions: In each of these questions a group of letters is given followed by four combinations of digit/symbol numbered (1), (2), (3) & (4). Letters are to be coded as per the scheme and conditions given below. You have to find out the serial number of the combination, which represents the letter group. Serial number of that combination is your answer. If none of the combinations is correct, your answer is (5) i.e. 'None of these'.**

**12 - 17:**

Letters : F G A K M E S P L Q B U R I T
Digit/Symbol : 9 % 2 $ * 7 @ 8 1 6 5 © 4 # 3

**Conditions:**

(i) If the first letter is a vowel and the last a consonant, both are to be coded as the code for the vowel.

(ii) If the first letter is a consonant and the last a vowel, the codes for the first and the last letters are to be interchanged.

(iii) If both the first and the last letters are consonants both are to be coded as 'δ'.

(iv) If more than two vowels are there in the group of letters, all vowels are to be coded as £.

12. TEFSUM

(1) δ79@©δ (2) 379@©* (3) *79@©3
(4) δ79@δ© (5) None of these

13. BSQEGU

(1) 5@67%© (2) δ@67%δ (3) ©@67%©
(4) 5@67©% (5) None of these

14. KAGFUB

(1) $2%9©5 (2) 52%9©$ (3) $2%©95
(4) δ2%9©δ (5) None of these

15. AQUMTE

(1) 76©*32 (2) £6£*3£ (3) 26©*32
(4) 26©*23 (5) None of these

16. IPKUSR

(1) #8$©@# (2) 48$©@# (3) #8$©@4
(4) #8$4@ (5) None of these

17. MGSELI

(1) *%@71# (2) *%@17# (3) #%@71*
(4) %#@17* (5) None of these

**18 - 22:**

Digits : 9 2 1 7 5 3 6 4 8
Letters : B V M L D P A F R

Conditions for coding the group of digits:-

I. If the first as well as the last digits are even, both are to be coded by the code for the first digit.

II. If the first as well as the last digits are odd, both are to be coded by the code for the last digit.

18. 397416
(1) PBLFMP (2) ABLFMA (3) PVLFMA
(4) PBDFMA (5) None of these

19. 562183
(1) PAVMRP (2) DAVMRD (3) PAVMRD
(4) DAVMRP (5) None of these

20. 734192
(1) DPFMBV (2) LPAMBV (3) LPFMVB
(4) LPFMBV (5) None of these

21. 812354
(1) RLVPDF (2) FMVPDF (3) RMVPDR
(4) RMVADF (5) None of these

22. 627851
(1) PULRDM (2) AVLRDM (3) AULRDM
(4) ABLRDM (5) None of these

**23 - 30:**

Letter : B M K A T R E U N H F I W D P
Digit/Symbol : 7 % 5 © 6 9 8 2 @ & # $ 3 * 4

**Conditions :**

(i) If the first letter is a vowel and the last letter is a consonant, both are to be coded as the code for the vowel.

(ii) If the first letter is a consonant and the last letter is a vowel, codes for these two are to be interchanged.

(iii) If both the first and the last letters are consonants, both are to be coded as the code for the last letter.

Now based on the above, find out the coded form of the letter groups given in each question.

23. IWDEF
(1) ©@3*8# (2) #@3*8# (3) #@3*89
(4) #3*@8# (5) None of these

24. MATRBW
(1) %©6973 (2) 3©6973 (3) %©697%
(4) 3©697% (5) None of these

25. EDPKTA
(1) 8*456© (2) ©*4568 (3) 8*4569
(4) 8*546© (5) None of these

26. ABUHFI
(1) ©217#$ (2) ©721#© (3) $721#$
(4) ©72#1$ (5) None of these

27. WPTMBI
(1) $46%73 (2) 346%7$ (3) 346%73
(4) $46%7$ (5) None of these

28. FHITWU
(1) #1$63# (2) 21$632 (3) #1#632
(4) 21$63# (5) None of these

29. HUDBRE
(1) 127*98 (2) 12*798 (3) 82*791
(4) 8*2791 (5) None of these

30. IMPNWK
(1) 5%4@3$ (2) $%4@35 (3) $%4@3$
(4) 5%4@35 (5) None of these

**31 - 36:**

Letter : D L E G Z K R U B W F H I A P
Digit/Symbol : 4 8 $ 1 # 5 7 © 2 6 % * 3 9 @

**Conditions:**

(i) If the first letter is a vowel and the last is a consonant, both are to be coded as the code of the consonant.

(ii) If both first and the last letters are consonants, both are to be coded as '$\delta$'.

(iii) If first letter is a consonant and last is a vowel, the codes for first and last letters are to be interchanged.

31. ELBGPU
(1) $821@© (2) ©821@$ (3) $812©@
(4) $812@ (5) None of these

32. UHRKLZ
(1) ©*758© (2) ©*758# (3) #*758#
(4) #*758© (5) None of these

33. BFIDWE
(1) 2%346$ (2) %3426$ (3) $%3426
(4) $2%634 (5) None of these

34. WKGLBA
(1) 951862 (2) 651829 (3) 651892
(4) 951826 (5) None of these

35. ABWUPF
(1) %26©@% (2) %26©@9 (3) 926©@%
(4) %269@ (5) None of these

36. ZEFHIR
(1) #$%*37 (2) $\delta$$%*3$\delta$ (3) 7$%*3#
(4) #%$*37 (5) None of these

**Directoins (37 - 40): In certain code language 0 (zero) is coded as ∪ and 1 is coded as •. Numbers do not have any other sign and any number above 1 is written by using either of the two symbols. If the value of 1 is doubled, it itself moves left by one place. In this way-**

0 is written as ∪

1 is written as •

2 is written as •∪

3 is written as ••

4 is written as •∪∪and this continues.

37. If ••• is multiplied with •• then the product is -

(1) •••••  (2) •••••  (3) •••••

(4) •••••  (5) ••••

38. How can we code 20% of 45.

(1) ••••  (2) •••  (3) •••

(4) •••••  (5) ••••

39. How can be code 7 in this code language?

(1) ••••••  (2) ••••••  (3) •••

(4) •••  (5) •••

40. If ••∪ is added to •∪•• then the sum is-

(1) •••••  (2) •••••  (3) •••••

(4) •••••  (5) •••••

**Answer with Explanations:**

1. 1; T E R M I N A L

-1 -1 -1 -1 +1 +1 +1 +1

S D Q L J O B M

Similary,

C R E D I B L E

-1 -1 -1 -1 +1 +1 +1 +1

B Q D C J C M F

2. 4; L A U B O U R

-1 +1 -1 +1 -1 +1

K B A P T S

Similary,

C A N D I D

-1 +1 -1 +1 -1 +1

B B M E H E

3. 1; Since,

CO NS UM ER

ER UM NS CO

Similary,

TR IA NG LE

LE NG IA TR

4. 4;

BREAKDOWN NWODKAERB

Similarly,

TRIANGLES SELGNAIRT

5. 1; B R E A K

| | | | |

5 1 3 4 2

and,

K I T E

| | | |

2 7 9 6

Therefore,

R I B

| | |

1 7 5

6. 1; S P R I N G

| | | | | |

# 2 % @ 4 =

and,

G O N E

| | | |

= 7 4 ©

Therefore,

S I G N

| | | |

# @ = 4

7. 2; F I G H T

| | | | | |
|---|---|---|---|---|
| 3 | 9 | % | © | 4 |

and,

| | | | | |
|---|---|---|---|---|
| T | E | A | R | S |
| 4 | 5 | 8 | © | H |

Similary,

| | | | | |
|---|---|---|---|---|
| S | T | A | G | E |
| H | 4 | 8 | % | 5 |

8. 4; Tree is very beautiful

⇒ ka na da ta...(i)

This is strong tree

⇒ na pa sa ka...(ii)

∴ is ⇒ na /ka

tree ⇒ na /ka

Clearly,

code for 'beautiful' cannot be found.

9. 4; si po re ⇒ book is thick..... (i)

ti na re ⇒ bag is heavy ..... (ii)

ka si ⇒ interesting book ..... (iii)

de ti ⇒ that bag ..... (iv)

According to equation (i) and (ii), is = re

According to equation (ii) and (iv), bag = ti

So, that = de

According to equation (i) and (iii), book = si

So, Interesting = ka

Clearly, code for ' that is interesting will be 'de re ka'.

10. 5; The colour of milk is white. But here white is called brown.

11. 4; The colour of milk is white. But here white is called yellow.

12. 1

13. 5; (©@67%5)

14. 4 15. 2 16. 1 17. 3 18. 5 19. 1

20. 4 21. 3 22. 2 23. 2 24. 2 25. 1

26. 5 27. 1 28. 4 29. 3 30. 3 31. 1

32. 3 33. 5 34. 4 35. 1 36. 2

37. 1; *** ⇒ (4 + 2 + 1) = 7

** ⇒ (2 + 1) = 3

(***) × (**) = 7 × 3 = 21

⇒ (16 + 0 + 4 + 0 + 1)

⇒ ****

38. 3; 45 dk 20% = 9

= (8 + 0 + 0 + 1) = ****

39. 5; 7 = 4 + 2 + 1 = ***

40. 2; (***) + (****)

(4 + 2 + 0) + (8 + 0 + 2 + 1)

= 6 + 11 = 17

= (16 + 0 + 0 + 0 + 1)

= *****