CHAPTER 04

Coding and Decoding

Coding is a method of transmitting information to someone using some suitable codes, so that it is not understood by others.

Decoding is the method of finding the actual meaning of those codes.

In questions based on coding-decoding, a word is coded in a particular way and the candidates are asked to code the other word in the same way.

There are mainly four types of questions which are asked:

1. Letter Coding- In this category, certain alphabets are coded as certain other alphabets. The candidate is required to understand the pattern and solve the problems based on that pattern.

Example 1: In a certain code language 'MIGHT' is written as 'GHMTI', then how will 'EARTH' be written in that code?

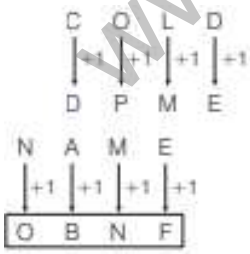
(a) RTEHA (b) RTEAH (c) RTAEH (d) RETHA

Sol. (a) As,

Example 2: In a certain code language 'COLD' is coded as 'DPME', then how will 'NAME' be written in that language?

(a) OBME (b) OBNF (c) BOFN (d) EMAE

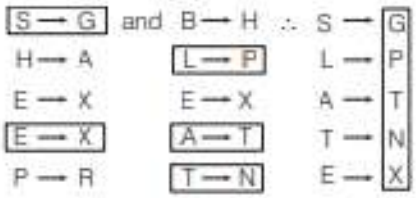
Sol. (b)



Example 3: In a certain coding system, 'SHEEP' is written as 'GAXXR' and 'BLEAT' is written as 'HPXTN'. How can 'SLATE' be written in that same coding system?

(a) GPTNX (b) GPTXN (c) GPXN (d) PTGXN

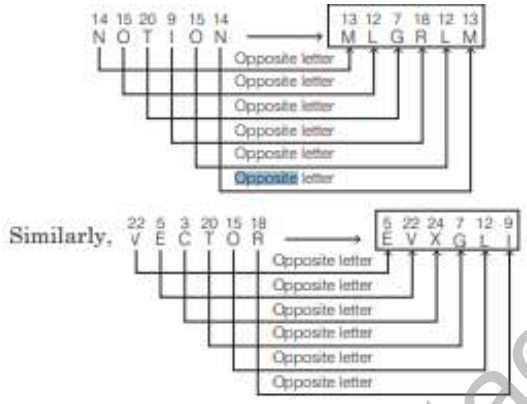
Sol. (a) In both the words 'SHEEP' and 'BLEAT', the letter E is common and code for E is X. Hence, using direct letter coding method, we have



Example 4: If in a certain code language 'NOTION' is written as 'MLGRLM', then how will 'VECTOR' be written in that language?

(a) EVXLGI (b) EVGXIL (c) EVXGIL (d) EVXGLI

Sol. (d) As,



2. Number/Symbol Coding- In this category, certain alphabets are coded as certain numbers /symbols. The candidate is required to understand the pattern and solve the problem based on that pattern.

Example 5: If in a certain code language 'PUT' is written as '16, 21, 20', then how will '**BAT'** be written in that language?

(a) 2, 4, 20 (b) 5, 2, 11 (c) 4, 5, 21 (d) 2, 1, 20

Sol. (d) Here, each letter assigned its positioned value in English alphabetical series.

PUT = 16, 21, 20 and BAT = 2, 1, 20.

Example 6: If X = 24 and BE = 7, then **RING = ?**

(a) 41 (b) 47 (c) 48 (d) 49

Sol. (c) Here, each letter is coded as its position in English alphabetical order and then the word is coded as the sum of the position of the alphabets in English alphabetical series.

X = 24 (positional value in English alphabet)

BE = + = 2 5 7

Similarly, RING = + + + = 18 9 14 7 4

Example 7: In a certain code, the following numbers are coded by assigning signs

1	2	3	4	5	6	7	8	9
<	+	=	□	↑	→	>	≠	—

Which number can be decoded from the given symbols?

→ ≠ > = <

(a) 63181 (b) 68731 (c) 62781 (d) 63118

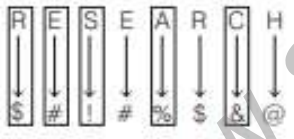
Sol. (b) According to the given table

→	≠	>	=	<
↓	↓	↓	↓	↓
6	8	7	3	1

Example 8: In RESEARCH is $#!#%$ & @, then SCARE is

(a) !&%$# (b) !@%$# (c) !$%#& (d) !@%#$

Sol. (a) As,



Similarly

3. Substitution Coding- In this category, a series of words is given and each word of this series is substituted with another word. The candidate is required to answer the question in the substituted code language.

Example 9: If 'Orange' is called 'Butter', 'Butter' is called 'Soap', 'Soap' is called 'Ink' and 'Ink' is called 'Red', then what is used for washing clothes?

(a) Red (b) Butter (c) Ink (d) Soap

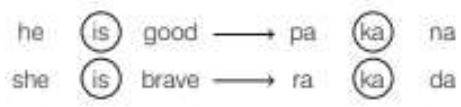
Sol. (c) We use 'Soap' to wash our clothes. But here 'Soap' is called 'Ink'. Therefore, 'Ink' is used for washing the clothes.

4. Message Coding- In this category, some messages are given in coded language. The candidate is required to find the code for a particular word or a message based on the information provided.

Example 10: In a certain code language 'he is good' is written as 'pa ka na' and ' she is brave' is written as ' ra ka da' find the code for 'is'.

(a) ka (b) na (c) da (d) ra

Sol. (a)



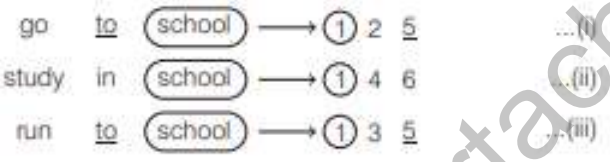
Here 'is' is common in both the messages. Similarly, the code 'ka' is common in the codes of both the messages.

So, 'is' → ka.

Example 11: In a certain code language 'go to school' = 125, 'study in school' = 146 and 'run to school' = 135. Which digit is used for 'run'?

(a) 6 (b) 2 (c) 3 (d) 1

Sol. (c) We have



Now, from Eq. (iii), to → 5, school → 1

∴ run → 3

Practice Questions

1. If 'FISH' is written as 'EHRG in a certain code, then how would JUNGLE be written in that code?

(a) ITMFKD (b) ITNFKD (c) KVOHMF d) TIMFKD

2. If SUMMER is coded as RUNNER, then code for WINTER will be

(a) SUITER (b) VIOUER (c) WALKER (d) SUFFER

3. If in a certain code, 'BASIC' is written as 'DDULE', then how is 'LEADER' written in that code?

(a) NGCFGT (b) NHCGGU (c) OGDFHT (d) OHDGHU

4. If the code for MOTHER is JRQKBU, then what is the code for PRINCIPAL?

(a) MRFKZLMXI (b) SULQFLSDO (c) MUFQZLMDI (d) MRFKZFMXI

5. If 'GOLD' is written as 'HOME', 'COME' is coded as 'DONE' and 'CORD' is coded as 'DOSE', then how would you code SONS?

(a) TPOT (b) TOOT (c) TOOS (d) TONT

6. If EHFNRQ is the code for BECKON, then which word has the code QDFWXULQ?

(a) NCAUTIRN (b) NACUTIRN (c) NATCRIUN (d) NACTURIN

7. In a certain code, SWITCH is written as TVJSDG. Which word would be written as CQFZE?

(a) BARED (b) BRAED (c) BREAD (d) BRADE

8. If in a certain language, MACHINE is coded as LBBIHOD, then which word would be coded as SLTMFNB?

(a) RKSLEMA (b) TKULGMC (c) RMSNEOA (d) TMUNGOC

9. In a certain code, INACTIVE is coded as VITCANIE. How is COMPUTER written in the same code?

(a) PMOCRETU (b) ETUPMOCR (c) UTEPMOCR (d) MOCPETUR

10. In a certain code, KAVERI is coded as VAKIRE. How is MYSORE written in that code?

(a) EROSYM (b) SYMROE (c) SYMERO (d) None of these

11. If SPIDER is written as PSDIRE in a certain code, then how could COMMON be written in that code?

(a) OCOMMO (b) OCMMNO (c) OCMOMN (d) OCMMON

12. If in a certain language, CONDEMN is written as CNODMEN, then how will TEACHER be written in that code?

(a) TAECEHR (b) TCAEHER (c) TAECHER (d) TAEECHR

13. In a certain code, DECEMBER is written as, ERMBCEDE. Which word will be written as ERMBVENO in that code?

(a) AUGUST (b) SEPTEMBER (c) OCTOBER (d) NOVEMBER

14. In a certain code, FIRE is written as QHOE and MOVE as ZMWE. Following the same rule of coding, what should be the code for the word OVER?

(a) MWED (b) MWEO (c) MWOE (d) MWIO

15. In a certain code, STOVE is written as FNBLK, then how will VOTES be written in that code?

(a) FLKBN (b) LBNKF (c) LKNBF (d) LNBKF

16. If in a code language 'PARENT' is written as 'BDFGJK' and 'CHILDREN' is written as 'MOXQUFGJ' then how is 'REPRINT' written in that same code?

(a) FGBFXJK (b) FGBUXJK (c) FGBFXGD (d) BGFXJK

17. In a code language 'ORGANISATION' is written as 'CBDWLQJWYQCL' and 'OPERATION' as 'CXFBWYQCL'. How would 'SEPERATION' be coded?

(a) EJXEBYQCL (b) JFQYWBCXQL (c) JFXFBWYQCL (d) QCLYWBFXJE

18. If the letters in PRABA are coded as 27595 and THILAK is coded as 368451, then how can BHARATI be coded?

(a) 9567568 (b) 9675538 (c) 9657538 (d) 9567538

19. If NOIDA is written as 39658, then how will INDIA be written?

(a) 36568 (b) 63568 (c) 63569 (d) 65368

20. If 'FLARE' is coded as 21, 15,26, 9, 22, then how would 'BREIF' be coded in the same language?

(a) 25, 9, 22, 21, 18 (b) 5, 37, 11, 19, 13 (c) 13, 19, 11, 37, 5 (d) 25, 9, 22, 18, 21

21. If 'LINGER' is '123456' and 'FORCE' is '56789' then 'FIERCE' will be

(a) 345667 (b) 456678 (c) 345677 (d) Cannot be determined

22. If B = 2, BAG = 10, then BOX = ?

(a) 36 (b) 39 (c) 41 (d) 52

23. If OWL = 50 and N = 14, then TIME is

(a) 45 (b) 47 (c) 43 (d) 49

24. If CAT =12, then MAN = ?

(a) 14 (b) 24 (c) 16 (d) 15

25. If ASHA equal 79, then VINAY BHUSHAN = ?

(a) 211 (b) 200 (c) 144 (d) 180

26. If MOBILITY is coded as 46293927, then EXAMINATION is coded as

(a) 45038401854 (b) 56149512965 (c) 57159413955 (d) 67250623076

27. If ARC is written as $@* and HIT is #&%, then CHAIR is

(a) #*&$@ (b) #*$&% (c) *#$&@ (d) *#$&%

28. In a certain code language 'SAFER' is written as '5@3#2' and 'RIDE' is written as '2©%#' how would 'FEDS' be written in that code?

(a) 3 # © 5 (b) 3 @ % 5 (c) 3 # % 5 (d) 3 # % 2

29. If in a certain code language 'STAR' is written as '5 $ * 2', 'TORE' is written as $ 3 2 @, then how will 'OATS' be written in that language?

(a) 3 * 5 $ (b) 3 * $ 5 (c) 3 $ * 5 (d) 3 5 * $

30. If in a certain code language 'GONE' is written as '5 @ © 9' and ''SEAL is written as '6 9 % *', then how will 'LOGS' be written in that language?

(a) * 9 © 6 (b) * 9 © 6 (c) * @ 65 (d) * @ 56

31. If 'sky' is 'star', 'star' is 'cloud', 'cloud' is 'earth', 'earth' is 'tree' and 'tree' is 'book' , then where do the birds fly?

(a) Cloud (b) Sky (c) Star (d) None of these

32. If 'sand' is called 'air' , 'air' is called 'plateau', plateau' is called 'well', 'well' is called 'island' and 'island' is called 'sky', then from where will a woman draw water?

(a) Well (b) Island (c) Sky (d) Air

33. 'If 'dust' is called 'air', 'air' is called 'fire', 'fire' is called 'water', 'water' is called 'colour', 'colour' is called 'rain' and 'rain' is called 'dust', then where do fish live?

(a) Fire (b) Water (c) Colour (d) Dust

34. If the animals which can walk are called 'swimmers', animals who crawl are called 'flying', those living in water are called 'snakes' and those which fly in the sky are called 'hunters', then what will a lizard be called?

(a) Swimmers (b) Snakes (c) Flying (d) Hunters

35. If 'blue' is called 'green', 'green' is called 'white', 'white' is called 'red', 'red' is called 'black', then what is the colour of clear sky?

(a) Blue (b) Green (c) White (d) Black

36. If 'god is great'= 'cp an bo', 'great help done' = 'er cp fs'and 'he is great' = 'bo cp dq', then what represents 'he is god'?

(a) cp er bo (b) an bo cp (c) dq bo cp (d) an bo dq

37. If ' cinto baoli tsi nzro' means 'her village is Sarurpur', mhi cinto keepi tsi oind' means 'her first love is literature' and 'oind geit tsi cinto pki' means 'literature collection is her hobby', which word would mean 'literature'?

(a) cinto (b) baoli (c) oind (d) geit

38. In a certain code, 592 means 'grapes are sweet', 374 means 'I like oranges' and 267 means 'oranges are sour'. Which digit represents sour?

(a) 9 (b) 5 (c) 6 (d) Cannot be determined

39. In a certain code language, '134' means 'good and tasty', '478' means 'see good pictures' and '729' means 'pictures are faint'. Which of the following digits stands for 'see' ?

(a) 9 (b) 2 (c) 1 (d) 8

40. If VOTER = 41352, HEATER = 743654, TEASER = 645834, which number represents S?

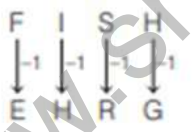
(a) 1 (b) 5 (c) 8 (d) 7

ANSWERS

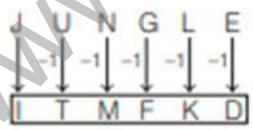
1.	(a)	**2.**	(b)	**3.**	(b)	**4.**	(c)	**5.**	(b)	**6.**	(d)	**7.**	(c)	**8.**	(b)	**9.**	(b)	**10.**	(c)
11.	(b)	**12.**	(a)	**13.**	(d)	**14.**	(b)	**15.**	(b)	**16.**	(a)	**17.**	(c)	**18.**	(c)	**19.**	(b)	**20.**	(d)
21.	(d)	**22.**	(c)	**23.**	(b)	**24.**	(a)	**25.**	(d)	**26.**	(b)	**27.**	(c)	**28.**	(c)	**29.**	(b)	**30.**	(d)
31.	(c)	**32.**	(b)	**33.**	(c)	**34.**	(c)	**35.**	(b)	**36.**	(d)	**37.**	(c)	**38.**	(c)	**39.**	(d)	**40.**	(c)

Hints & Solutions

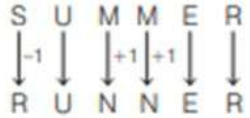
1. (a) As,



Similarly,



2. (b) As,



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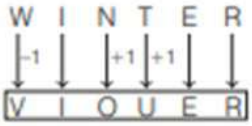
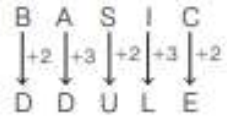


3. (b) As,



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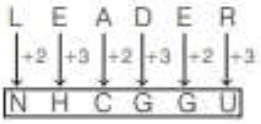
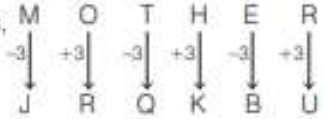


4. (c) As,



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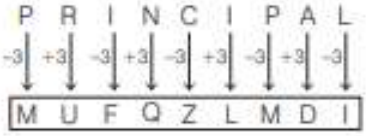
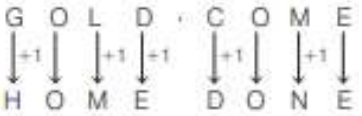
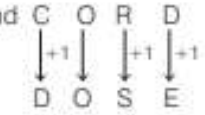


5. (b) Here, each consonant is move (a) one step forward and

As,



and



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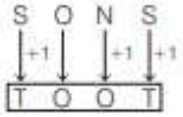
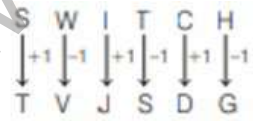


6. (d) As,

Similarly,

7. (c) As,



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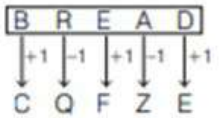
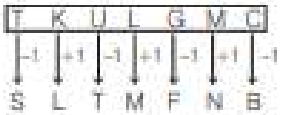


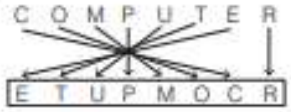
8. (b) As,

Similarly,



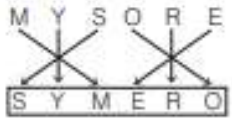
9. (b) As,

Similarly,



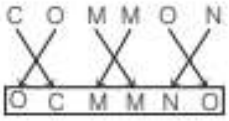
10. (c) As,

Similarly,



11. (b) As,

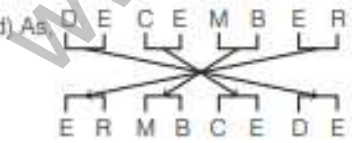
Similarly,

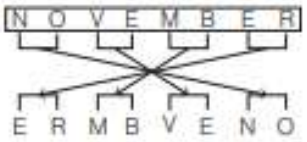


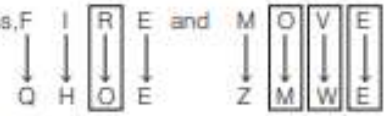
12. (a) As,

Similarly,

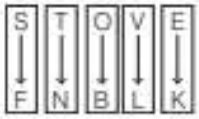
13. (d) As,



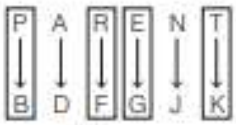
Similarly, 

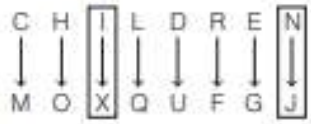
14. (b) As, 

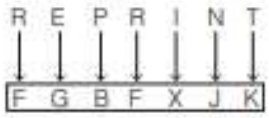
Similarly, 

15. (b) As, 

Similarly, 

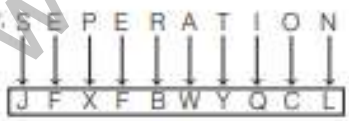
16. (a) As, 

and 

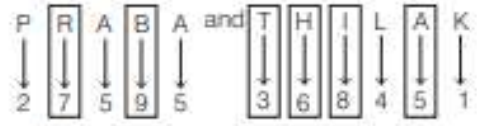
Similarly, 

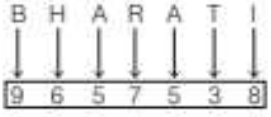
17. (c) As,

and 

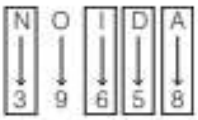
Similarly, 

18. (c) As,



Similarly, 

19. (b) As,

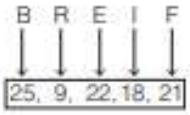


Similarly,

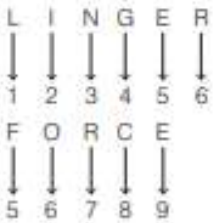
20. (d) Here, each letter is coded by its position in reverse English alphabetical order

As,

Similarly,



21. (d) As,



Similarly,

F ⟶ 5

I ⟶ 2

E ⟶ 5/9

R ⟶ 6/7

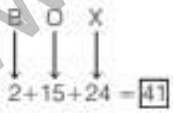
C ⟶ 8

E ⟶ 5/9

Hence, code for 'FIERCE' cannot be determined

22. (c) As, B = 2 (positional value in English alphabet)

Similarly,



23. (b) N = 14 (positional value in English alphabet) O W L = 15 + 23 + 12 = 50

Similarly, T I M E = 20 + 9 + 13 + 5 = 47

24. (a) As, C A T

3 +1 +20 = 24, 24÷2=12

Similarly, M A N

13+1+14 = 28, 28÷2= 14

25. (d) As,

A S H A

Position in reverse English alphabet ⇒ 26, 8, 19, 26 = 79

Similarly,

V I N A Y B H U S H A N

Position in reverse English alphabet ⇒ 5 + 18 + 13 + 26 + 2 + 25 + 19 + 6 + 8 + 19 + 26 + 13

= 180

Position in reverse English alphabet

26. (b) As, M O B I L I T Y

13 15 2 9 12 9 20 25

1+3 1+5 2 9 1+2 9 2+0 2+5

4 6 2 9 3 9 2 7

Similarly,

E X A M I N A T I O N

5 24 1 13 9 14 1 20 9 15 14

5 2+4 1 1+3 9 1+4 1 2+0 9 1+5 1+4

5 6 1 4 9 5 1 2 9 6 5

27. (c) As,

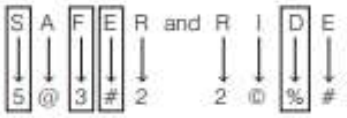
A R C and H I T

$ @ * # & %

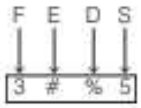
Similarly, C H A I R

* # $ & @

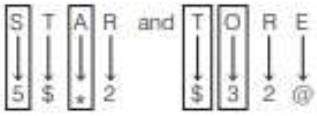
28. (c) As,



Similarly,

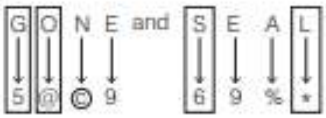


29. (b) As,

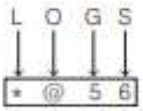


Similarly,

30. (d) As,



Similarly,



31. (c) Birds fly in the sky and here sky is called star. So, Birds fly in star.

32. (b) We know that, water is drawn from well and here well is called island.
So, woman will draw water from island.

33. (c) Fish lives in water and here water is called colour. So, fish lives in colour.

34. (c) We know that lizard crawls and animals who crawl are called flying so, lizard is called flying.

35. (b) Colour of clear sky is blue and here blue is called green. So, colour of clear sky is green.

36. (d) god (is) [great] ⟶ [cp] an (bo)

[great] help done ⟶ er [cp] fs

he (is) [great] ⟶ (bo) [cp] dq

Here, he = dq, is = bo, god = an

∴ he is god = dq bo an ⇒ an bo dq

37. (c)

her village is sarurpar → cinto baoli tsi nzro

her first love is (literature) → mhi cinto keepi tsi (oind)

(literature) collection is her hobby → (oind) geit tsi cinto pki

∴ Code for literature is 'oind'

38. (c) 5 9 [2] ⟶ grapes [are] sweet

3 (7) 4 ⟶ I like (oranges)

[2] 6 (7) ⟶ (oranges) [are] sour

∴ 6 = sour

39. (d) (good) and tasty → 1 3 (4)

see (good) pictures → (4) 7 8

pictures are faint → 7 2 9

∴ Code for see ⇒ 8

40. (c) Given,

V O (T)[E](R) = [4] 1 (3)(5) 2

H [E](A)(T)[E](R) = 7 [4](3)(A)(5)[8]

(T)[E](A) S [E](R) = (A)[4](5) 8 (3)[1]

∴ S = 8