

CODING AND DECODING

Instruction

A **CODE** is a 'system of signals'. Therefore, Coding is a method of transmitting a message between the sender and the receiver without a third person knowing it. The Coding and Decoding Test is set up to judge the candidate's ability to decipher the rule that codes a particular word/message and break the code to decipher the message.

Letter Coding

In these questions, the real alphabets in a word are replaced by certain other alphabets according to a specific rule to form its code. The candidate is required to detect the common rule and answer the questions accordingly.

Case I. To form the code for another word (CODING)

Examples:

1. If in a certain language MYSTIFY is coded as NZTUJGZ, how is NEMESIS coded in that language?

- (A) MDLHRDR (B) OFNFTJT
 (C) ODNHTDR (D) PGOKUGU

Sol. (B) Clearly, each letter in the word MYSTIFY is moved one step forward to obtain the corresponding letter of the code.

M	Y	S	T	I	F	Y
+ 1 ↓						
N	Z	T	U	J	G	Z

So, in NEMESIS, N will be coded as O, E as F, M as N and so on. Thus, the code becomes OFNFTJT.

Hence, the answer is (B).

2. If TAP is coded as SZO, then how is FREEZE coded?

- (A) EQDFYG (B) ESDFYF
 (C) GQFDYF (D) EQDDYD

Sol. (D) Clearly, each letter in the word TAP is moved one step backward to obtain the corresponding letter of the code.

S	Z	O
- 1 ↑		
T	A	P

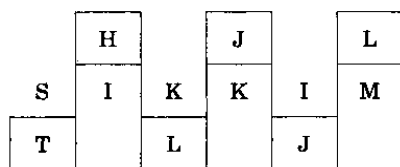
Thus, in FREEZE, F will be coded as E, R as Q, E as D and Z as Y.

So, the code becomes EQDDYD. Hence, the answer is (D)

3. In a certain code, SIKKIM is written as THLJL. How is TRAINING written in that code?

- (A) SQBHOHOH (B) UQBHOHOF
 (C) UQBJOHHO (D) UQBJOHOH

Sol. (B) Clearly, the letters in the word SIKKIM are moved alternately one step forward and one step backward to obtain the letters of the code.



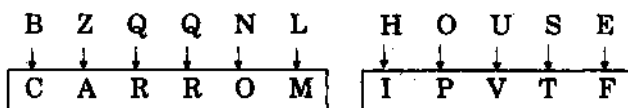
So, in TRAINING, T will be coded as, U, R as Q, A as B, I as H, N as O and so on.

Thus, the code becomes UQBHOHOF. B Hence, the answer is (B)

Case II : To find the word by analysing the given code (DECODING).

4. If in a certain language CARROM is coded as BZQQNL, which word will be coded as HOUSE ?
 (A) IPVTF (B) GNTRD
 (C) INVRF (D) GPTID

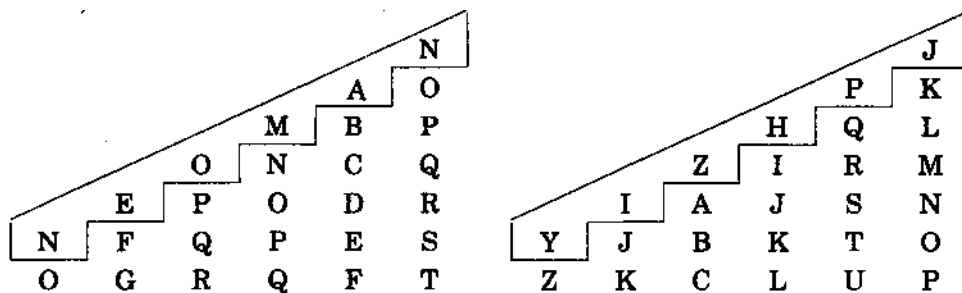
Sol. (A) Each letter of the word is one step ahead of the corresponding letter of the code.



So, H is coded as I, O as P, U as V, S as T and E as F i.e. HOUSE is coded as IPVTF. Hence, the answer is (A)

5. If in a certain language, NEOMAN is coded as OGRQFT, which word will be coded as ZKCLUP ?
 (A) YJBKTO (B) XIAJSN
 (C) YIZHPJ (D) YIAQKJ

Sol. (C) Clearly, as shown, in the word, the first letter is one place, second is two places, third is three places, fourth is four places, fifth is five places and sixth is six places before the corresponding alphabet in the given code. Hence, the correct answer is (C)



Number Coding

In these questions, either numerical code values are assigned to a word or alphabetical code letters are assigned to the numbers. The candidate is required to analyse the code as per the directions.

Case I : When numerical code values are assigned to words

6. If in a certain language A is coded as ' 1, B is coded as 2, and so on, how is BIDDIC coded in that code ?
 (A) 294493 (B) 284563
 (C) 375582 (D) 394492

Sol. (A) As given the letters are coded as ABCDEFGHI 12 3 456 7 8 9

So, in BIDDIC, B is coded as 2, I as 9, D as 4, and C as 3. Thus, BIDDIC is coded as 294493-. Hence, the answer is (A)

7. If PAINT is coded as 74128 and EXCEL is coded as 93596, then how would! you encode ACCEPT ?
 (A) 455978 (B) 547978
 (C) 554978 (D) 735961

Sol. (A) Clearly, in the given code, the alphabets are coded as follows : P A I N T E X C E L & 7 4 1 2 8 9 3 5 9 6
 So, in ACCEPT, A is coded as 4, C as 5, E as 9, P as 7 and f as 8. Hence,! the correct code is 455978 arid therefore, the answer is (A)

8. If D = 4 and COVER = 63, then BASIS = ?
 (A) 49 (B) 50
 (C) 54 (D) 55

Sol. (B) Clearly, in the given code, A = 1, B = 2, C = 3, ... so that
 COVER = 3 + 15 + 22 + 5 + 18 = 63.
 Now, in BASIS, B = 2, A = 1, S = 19, I = 9.
 Thus, BASIS = 2 + 1 + 19 + 9 + 19 = 50
 Hence, the answer is (B)

Number to Letter Coding

When alphabetical code values are assigned to the numbers

9. In a certain code, 2 is coded as P, 3 as N, 9 as Q, 5 as R, 4 as A and 6 as B. How is 599423 coded in that code ?
 (A) EIIDBC (B) RQPANB
 (C) EIMDBC (D) RQQAPN

Sol. (D) Clearly, as given 5 is coded as R, 9 as Q, 4 as A, 2 as P and 3 as N. So, 599423 is coded as RQQAPN.
 Hence, the answer is (D).

10. In a certain code, 3456 is coded as ROPE, 15526 is coded as APPLE, then how is 54613 coded ?
 (A) RPPEO (B) ROPEA
 (C) POEAR (D) PAREO

Sol. (C) Clearly in the given figures, the numbers are coded as follows :

3	4	5	6	1	2
R	O	P	E	A	L

i.e. 5 is coded as P, 4 as O, 6 as E, 1 as A and 3 as R. So, 54613 as coded as POEAR.

Matrix Coding

Directions : In each of the following questions, a word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in the two given matrices. The columns and rows of matrix I are numbered from 0 to 4 and that of matrix II from 5 to 9. A letter from these matrices can be represented first by its row and next by column number e.g., in the matrices for question 1, A can be represented by 13, 23 etc. T can be represented by 58, 65 etc. Similarly, you have to identify the set for the word given in each question.

Questions 1 to 3

1. Matrix I

	O	1	2	3	4
0	D	K	A	E	C
1	C	D	K	A	E
2	K	C	E	A	D
3	K	C	D	E	A
4	E	D	A	K	C

Matrix II

	5	6	7	8	9
5	P	L	0	T	N
6	T	P	N	L	0
7	P	N	T	0	L
8	0	N	T	P^	L
9	L	0	P	N	T

COLD

(A) 44, 96, 95, 22

(B) 31, 99, 77, 22

(C) 30, 66, 86, 43

(D) 10, 85, 79, 24

2. 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	0	P	N
9	P	N	L	T	0

POND

(A) 88, 99, 77, 33

(B) 76, 87, 65, 22

(C) 68, 99, 77, 33

(D) 57, 68, 89, 42

3. Matrix - I

	0	1	2	3	4
0	E	A	T	S	H
1	A	H	T	E	S
2	E	H	A	S	T
3	H	E	A	T	S
4	S	H	T	A	E

Matrix - II

	5	6	7	8	9
5	0	R	K	L	P
6	L	P	0	R	K
7	0	K	R	P	L
8	P	R	K	L	O
9	R	L	K	0	P

REAP

- (A) 96, 00, 01, 99 (B) 86, 34, 24, 69 \
- (C) 68, 21, 22, 867 (D) 56, 00, 22, 59

Substitution

In this type of questions, some particular objects are assigned code names. Then a question is asked that is to be answered in the code language.

- 11.** If cook is called butler, butler is called manager, manager is called teacher, teacher is called clerk and clerk is called principal, who will teach in a class ?

- (A) Cook (B) Butler
 (C) Clerk (D) Teacher

Sol. (C) Clearly 'teacher teaches in a class and as given 'teacher' is called 'clerk'.
 So, a 'clerk' will teach in the class.

- 12.** If diamond is called gold, gold is called silver, silver is called ruby and ruby is called emerald, which is the cheapest jewel ?

- (A) Diamond (B) Silver
 (C) Gold (D) Ruby

Sol. (D) We know that 'silver' is cheapest. But, as given, 'silver' is called 'ruby'. So, 'ruby' is the cheapest.
 Hence, the answer is (D).

- 13.** If eye is called hand, hand is called mouth, mouth is called ear, ear is called nose and nose is called tongue, with which of the following would a person hear ?

- (A) Eye (B) Mouth
 (C) Nose (D) Tongue

Sol. (C) A person hears with his 'ear'. But as per the given information, 'ear' is called 'nose'. So, a person will hear

with the 'nose. Hence, the answer is (C).

Mixed Letter Coding

In this type of questions, three or four complete messages are given in the coded language and the code for a particular word is asked. To analyse such codes, any two messages bearing a common word are picked up. The common code word will mean that word. Proceeding similarly by picking up all possible combinations of two, the entire message can be analysed.

14. If 'nso ptr kli chn' stands for 'Sharma gets marriage gift', (ptr Inm wop chn' stands for 'wife gives marriage gift', (tti wop nhi' stands for 'he gives nothing', what would mean 'gives' ?

(A) chn (B) nhi

(C) ptr (D) wop

Sol. In the second and third statements, the common word is 'gives' and the common code word is 'wop'. So, 'wop' means 'gives'.

Hence, the answer is (D).

15. If 'tee see pee' means 'Drink fruit juice'; 'see kee lee' means 'Juice is sweet and 'lee ree mee' means 'He is intelligent', which word in that language means 'sweet' ?

(A) see (B) kee

(C) lee (D) pee

Sol. In the first and second statements, the common word is 'Juice' and the common code word is 'see'. So, 'see' means 'Juice'. In the second and third statements, the common word is 'is' and the common-code is 'lee'. So, 'lee' means 'is'.

Thus, in the second statement, the remaining word 'sweet' is coded as 'kee. Hence, the answer is (B).

Mixed Number Coding

In this type of questions, a few groups of numbers each coding each coding a certain short message, are given. Through a comparison of the given coded messages, taking two at a time, the candidate is required to find the number code for each word and them formulate the code for the message given.

16. In a certain code,'786' means 'study very hard' '958 means 'hard work pays' and '645' means 'study and work'. Which of the following is the code for 'very' ?

(A) 8 (B) 6

(C) 7 (D) Can't be determined

Sol. (C) In the first and second statements, the common word is 'hard' and the common code digit is '8' So, '8' means 'hard' In the first and second statements, the common word is 'study' and the common code digit is '6' So, '6' means 'study'. Thus, in the first statement, '7' means 'very'. Hence the answer is (C)

17. If in a certain code language, '324' means 'Light is bright', '629, means 'Girl is beautiful' and '4758' means ' I prefer bright clothes', which digit means 'Light' in that language?

(A) 3 (B) 2

(C) 4 (D) 7

Sol. (A) In the first and second statements, the common word is 'is' and the common code digit is '2'. So '2' means 'is'. In the first and third statements, the common word is 'bright' and the common code digit is '4'. So, '4' means 'bright'. Thus, in the first statement, '3' means 'Light'. Hence, the answer is (A)

Exercise

Directions: In each of the following question four alternative answers are given. Find out the correct answer for each question

1. If in a certain language P R O S E is coded as P P O Q E, how is 'L I G H T' coded in that code ?
 (A) L I G F T (B) L L G F E
 (C) J I E H R (D) L K G J T
2. If in a certain language PRACTICE is coded as PICCTRAE, how is 'FLAMES' coded in that code ?
 (A) FEMALS (B) FALEMS
 (C) FMELAS (D) FALMES
3. If in a certain language, METAPHER is coded as EMATHPRE, how is 'NORMAL' coded in that code ?
 (A) ORMLAN (B) ONRMLA
 (C) ONMRAL (D) ONMRLA
4. If in a certain language, FIELD is coded as GJFME, how is 'SICKLE' coded in that code ?
 (A) RHBKJD (B) RHJBKD
 (C) TJDLMF (D) TJDMLF
5. If in a certain language, HAPPY is coded as GBOQX, how is 'CROSS' coded in that code ?
 (A) DSPTR (B) DSNRT
 (C) DSNTR (D) DNSTR
6. If any word LPPHGLDWH is coded as IMMEDIATE, how is 'WRSVHFUHW' coded in that code ?
 (A) YUVKIXKY (B) FAITHFUL
 (C) TOPSBRASS (D) TOPSECRET
7. If in a certain language, HOUSE is coded as INVRF, how is 'CROWD' coded in that code ?
 (A) BGNVC (B) DQPVK
 (C) DQPVE (D) DSPXE
8. If in a certain language PANKEJ is coded as OBMLDK, how is 'SAROD' coded is that code ?
 (A) RBSPC (B) RBQPC
 (C) TZQAC (D) RBPQC
9. If in a certain language, KNOWLEDGE is coded as 256535475 and RAM is coded as '918' how is 'GENERAL' coded in that code ?
 (A) 7545993 (B) 7969393
 (C) 7555913 (D) 755591
10. If 'RESULT' is coded as 'LTRESU' then 'IGHTBR' will coded as:
 (A) BIRTH (B) GIRTH
 (C) RIGHT (D) BRIGHT

11. If 'CNMC' is the language code for 'ALKA' then 'CUJC' is the same language code for which one?
 (A) ABHA (B) ASHA
 (C) AMNA (D) ATMA
12. In a certain code 'SOBER' is written as 'RNADQ' how 'LOTUS' can be written in that code?
 (A) MPUWT (B) KMSTR
 (C) LMRST (D) KNSTR
13. If in a code language 'SUDHA' is written as UWFJC, then how 'RAM' will be written in the same code language?
 (A) AMR (B) TCO
 (C) SCN (D) TCN
14. If 'ROAD' is coded in a certain language as URDH, how SWAN will be coded?
 (A) VXDQ (B) VZDQ
 (C) UXDQ (D) VZCQ
15. If PRAMOD be coded as SODJRA in a certain language, how will KESHAV be coded?
 (A) NBUEDS (B) NBVECS
 (C) NBVFDS (D) NBVEDS
16. If in a certain code SCRIPT is written as TCQIQT, how will DIGEST be written?
 (A) EIFETT (B) TIHETT
 (C) EIFERT (D) EIHETT
17. If UNDERSTAND is coded as 1234567823, how will START be coded?
 (A) 56781 (B) 83243
 (C) 73652 (D) 67857
18. If MONDAY is coded as 123456 and BELT is coded as 0789, how would you encode the word TOMBAY?
 (A) 921056 (B) 460528
 (C) 290165 (D) 358702
19. If CUPBOARD is coded as CXPBXXRD, how will CRAFT be coded?
 (A) CRAXT (B) CRAFT
 (C) CRXFT (D) XRAFT
20. In a certain code 'FAVOUR' is written as ECURTV, how is 'FOSTER' written in that code?
 (A) QEWRVD (B) EPRVDU
 (C) GQTWFV (D) EQRWDV
21. If the word KNIFE is coded as MPKHG, what do the letters DTGCF stand for?
 (A) BARED (B) BRAED
 (C) BRADE (D) BREAD
22. If MNPQWCFG stand for the word LOVE, then for which word do the letters UBCUVFG stand?
 (A) HOME (B) HATE
 (C) KITE (D) WIFE
23. If in a certain language GONE is coded as ILPB, then for what word do the letters EOKY stand?
 (A) IBCR (B) RIBC
 (C) CIRB (D) CRIB

24. If in a certain language THEN is coded as RLBS, then for what word AEPJ is coded?
 (A) CSAE (B) SACE
 (C) CASE (D) CAES
25. If in a certain code, HPEX is coded as KTIZ, then which word would be coded as LIFE?
 (A) IEBC (B) IECB
 (C) IBEC (D) BICE

Directions: There are four alternative answers for each of the following questions. Find out the correct one.

26. If in a certain language SISTER is coded as 535301, UNCLE is coded as 84670 and BOY as 129, how will SON be coded?
 (A) 923 (B) 524
 (C) 342 (D) 872
27. If $Z = 52$ and $ACT = 48$, then BAT will be equal to.
 (A) 39 (B) 41
 (C) 44 (D) 46
28. In a code language 'HALF' is written as 'IAMG' and 'TWICE' is written as 'UXIDE'. How would 'HAEMATIN' be written in the same code?
 (A) HAENAUIO (B) HBFNBUJO
 (C) IAENAUIO (D) IBFNBUJO
29. If $A = 1$, $BAN = 17$, then $INDIA = ?$
 (A) 37 (B) 39
 (C) 36 (D) 35
30. Which one of the following is the value of $H + B + F$?
 (A) 20 (B) 16
 (C) 17 (D) 15
31. If $TOM = 48$ and $DICK = 27$, then $HARRY = ?$
 (A) 46 (B) 50
 (C) 70 (D) 67
32. If $H = 8$, $HE = 13$, Then 'HEN' Will be equal to
 (A) 22 (B) 24
 (C) 25 (D) 27
33. If in a certain code $2 = T$, $4 = S$, $8 = U$, $9 = D$, $7 = E$, $1 = C$ and $3 = M$, what is code for MUTED?
 (A) 38297 (B) 83279
 (C) 38739 (D) 38279
34. If ARUL could be given the code number 52, what code number can be given to BINA?
 (A) 50 (B) 26
 (C) 30 (D) 42
35. If BEDI could be given the code number 20, what code number can be given to VISU?
 (A) 71 (B) 79
 (C) 54 (D) 81

Directions: The number in each question from 36 to 40 is to be coded according to the following code:

Digits: 721539864

Letters: WLMSINDJB

You have to find out which of the answers (A), (B), (C) and (D) and has the correct coded form of the given number.

36. 5 2 3 7 9
 (A) S L N W I (B) S L I W N
 (C) S L I N J (D) M L S W I
37. 1 8 4 6 3 2
 (A) M D J B S L (B) M D J B W L
 (C) B D L S M W (D) M D B J I L
38. 6 4 9 2 8
 (A) J B L N D (B) J B N L D
 (C) D B N L S (D) J B L S D
39. 6 9 4 1 3
 (A) J N B W D (B) J N B W I
 (C) J N B M I (D) J N B I M
40. 9 2 8 6 7 5
 (A) N L D J W S (B) N L D J S W
 (C) L D N J W S (D) D S W J L N

Directions: The group of letters in each question from 41 to 45 is to be coded according to the following code:

Letters: DINESHKUM

Digits: 825174936

41. DESHMUN
 (A) 2174672 (B) 8175346
 (C) 1356984 (D) 8174635
42. NISUDIM
 (A) 3598762 (B) 8723569
 (C) 5273826 (D) 5273628
43. SIMUKI
 (A) 763922 (B) 726923
 (C) 726392 (D) 632793
44. INKSEKH
 (A) 5943267 (B) 4376952
 (C) 2517497 (D) 2597194
45. MUNESH
 (A) 635147 (B) 635174
 (C) 631574 (D) 536417

Answer Key

Q.No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	D	C	D	C	C	D	C	C	C	D	B	D	B	B	D	A	D	A	C	D
Q.No	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans.	D	B	D	C	A	B	D	C	A	B	C	D	D	B	A	B	D	B	C	A
Q.No	41	42	43	44	45															
Ans.	D	B	C	D	B															