CODING - DECODING

- 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 arid Decoding Test is set to judge the candidate's ability to crack the rule that codes a particular word/message and break the code to understand the message.

TYPE 1 : 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.

- You are required to detect the common rule and answer the questions accordingly.

Ex.1

- If TAP is coded as SZO. then how is FREEZE coded ?

(a) EQDFYG
(b) ESDFYF
(c) GQFDYF
(d) EQDDYD

- Clearly, each letter in the word TAP is moved one step backward to obtain the corresponding letter of the code.

- 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).

Ex. 2

- In a certain code, SIKKIM is written as THLJJL.

  How is TRAINING written in that code ?

- (a) SQBHOHOH
- (b) UQBHOHOF
- (c) UQBJOHHO
- (d) UQBJOHOH
- (e) None of these

- 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.
- Hence, the answer is (b).

Ex.3

- In a certain code, FORGE is written as FPTJI. How is CULPRIT written in that code ?

(a) CSJNPGR
(b) CVMQSTU
(c) CVNSVNZ
(d) CXOSULW

- Clearly, the first letter in the word FORGE remains as it is and the second, third, fourth and fifth letters are respectively moved one, two, three and four steps forward to obtain the corresponding letters of the code.
  Applying the same rule to the letters of the word CULPRIT, C will remain unchanged, U will be coded as V, L as N, P as S, R as V, I as N and T as Z. Thus, the code becomes CVNSVNZ.
- Hence, the answer is (c).

- If in a code, ALTERED is written as ZOGVIVW, then in the same code, RELATED would be written as

(a) IVOZGVW
(b) IVOZGWV
(c) IVOGZVW
(d) VIOZGVW

- Clearly, each letter of the word ALTERED is replaced by the letter which occupies the same position from the other end of the English alphabet, to obtain the code. Thus. A, the first letter of the alphabet, is replaced by Z, the last letter. L, the 12th letter from the beginning of the alphabet, is replaced by O, the 12th letter from the end. T, the 7th letter from the end of the alphabet is replaced by G, the 7th letter from the beginning of the alphabet, and so on.
- Similarly, in the word RELATED, R will be coded as I, E as V, L as 0, A as Z, T as G and D as W. Thus, the code becomes IVOZGVW.
- Hence, the answer is (a).

- In a certain code, MENTION is written as LNEITNO. How is PATTERN written in that code ?

(a) APTTREM
(b) PTAETNR
(c) OTAETNR
(d) OTAETRN
(e) None of these

- Clearly, to obtain the code, the first letter of the word MENTION is moved one step backward and the remaining letters are reversed in order, taking two at a time.
- So, in PATTERN, P will be coded as 0 and the sequence of the remaining letters in the code would be TAETNR. Thus, the code becomes OTAETNR.
- Hence, the answer is (c).

TYPE-2
Direct Letter Coding

- In this type, particular letters are made codes for particular letters without there being any set pattern.
- For example, let us consider a language in which A is coded as W, C as P, E as T, L as Z, S as B & T as K. Then the code for CASTLE will be PWBKZT.

Direct Letter Coding

- In direct-coding, the code letters occur in the same sequence as the corrosponding letters occur in the words.

Ex.

- If in a certain code, O is written as E, A as C, M as I, S as O, N as P, E as M, I as A, P as N and C as S, then how will COMPANIES be written in that code ?

- (a) SMINCPAMO
- (b) SEIACPAMO
- (c) SEINCPAMO
- (d) SEINCPMIO

- Answer : C

Ex. :

- If in a code language, PARENT is written as BDFGJK and CHILDREN as MOXQUFGJ, how is REPRINT written in that code ?

- (a) FGBFXJK
- (b) FGBUXJK
- (c) FGBFXGD
- (d) BGBFXJK

- Answer : a

TYPE-3
NUMBER / SYMBOL 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 analyze the code.

- **Case I : When numerical code values are assigned to words.**

- Ex. 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

- Answer :

  As given the letters are coded as

  A B C D E F G H I . . .

  1 2 3 4 5 6 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).

Ex. :

- If E=5 , PEN=35 then PAGE = ?

- (a) 27
- (b) 28
- (c) 29
- (d) 36

- Answer :

  Putting A=1, B=2, C=3, D=4, E=5, …, M=13, …, X=24, Y=25, Z=26, we have :

  PEN = P + E + N = 16 + 5 + 14 = 35.

  So, PAGE = P + A + G + E = 16 + 1 + 7 + 5 = 29.

  Hence, the answer is (c).

Ex. :

- If RED is coded as 6720, then how would GREEN be coded ?

(a) 1677199
(b) 1677209
(c) 16717209
(d) 9207716

- Answer :

  RED = DER = 4/5/18 = 6/7/20 = 6720.

  GREEN = NEERG = 14/5/5/18/7 = 16/7/7/20/9
  = 1677209.

  Hence, the answer is (b).

➢ Case II : When alphabetical codes are assigned to numbers.

- This type of questions are of direct – coding only.

Ex. :

- In a certain code, a number 13479 is written as AQFJL and 2568 is written as DMPN. How is 396824 written in that code ?

(a) QLPMNF
(b) QLPNMF
(c) QLPNMJ
(d) QLPNDF

- Answer : D

TYPE-4 MATRIX CODING

Matrix I

	0	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 (6) 31, 99, 77, 22 (c) 30, 66. 86, 43 *(d)* 10, 85, 79, 24

- Answer : D

  From matrix I, C can be coded as 04, 10, 21, 31 or 44.
  From matrix II,O can be coded as 57, 69, 78, 85 or 96.
  From matrix II,L can be coded as 56, 68, 79, 89 or 95.
  From matrix I, D can be coded as 00, 11, 24, 32 or 41.
  Clearly, only (d) contains all correct codes.

TYPE-5 SUBSTITUTION

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

Ex. :

- 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) Manager

  (d) Teacher

  (e) Clerk

- Answer : E

  A 'teacher' teaches in a class and as given teacher' is called 'clerk'.

  So, a 'clerk* will teach in the class.

  Hence, the answer is *(e).*

Ex. :

- If white is called blue, blue is called red, red is called yellow, yellow is called green, green is called black, black is called violet and violet is called orange,

  what would be the colour of human blood ?

  (a) Red

  (6) Green

  (c) Yellow

  (d) Violet

  (e) Orange

- Answer : C

  The colour of the human blood is 'red' and as given, 'red' is called ‘yellow'.

  So, the colour of human blood is 'yellow’.

  Hence, answer is C.

TYPE 6 : 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 analyze 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 analyzed.

Ex. :

- 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

- Answer : D

  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).

Ex. :

- In a certain code language, *'Mink Yang Pe' means 'Fruits are ripe'; 'Pe Lao May Mink' means 'Oranges are not ripe' and 'May Pe Nue Mink' means 'Mangoes are not ripe'.*

  Which word in that language means 'Mangoes' ?

  (a) May

  (b) Pe

  (c) Nue

  (d) Mink

- Answer : C

  In the second and third statements, the common code words are 'Pe', 'Mink' and

  'May' and the common words are 'are', 'not' and 'ripe'.

  So, in the third statement, ‘Nue' stands for 'mangoes'.

  Hence, answer is C.

TYPE 7 : MIXED NUMBER CODING

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

Ex. :

- 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

  (e) None of these

- Answer : 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 third 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).*