CODING - DECODING

INTRODUCTION

(i) Coding: A method of transmitting a message between sender and receiver which cannot be understood or comprehended by a third person unless we use a pattern of code that has been followed.

(ii) Decoding: Decoding refers to the, process of arriving at an equivalent word from the code word given.

TYPES OF CODING - DECODING

Type -1: Letter Coding

In these questions, the letters in a word are replaced by certain other letters according to a specific rule to form its code.

Illustration:

If SUMMER is coded as RUNNER, the code for WINTER will be

(A) SUITER (B) VIOUER (C) WALKER (D) SUFFER

Solution:

The first letter of the word is moved one step back ward, while the two middle letters are each moved one step forward to obtain the corresponding letters of the code.

Type -2: Direct Letter Coding

Sometimes, 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, Las Z, S as Band T as K. Then, the code for CASTLE in that language is PWBKZT.

Such type of coding is called **direct-coding**.

Illustration

If in a certain code, L is written as K, A as C, E as X, T as O, F as P, then how will LEAFLET be written in that code?

(A) LEATLET (B) KXCPKXO (C) KXCPXKF (D) KCXPFXO

Solution:

Substituting the letters of the given word with their respective codes, we have:

L	E	A	F	L	E	T
↓	↓	↓	↓	↓	↓	↓
K	X	C	P	K	X	O

Hence, the answer is (B)

Type -3: Number/Symbol Coding

Here, either numerical code values are assigned to a word or alphabetical code letters are assigned to the numbers.

Illustration

If MACHINE is coded as 19 - 7 - 9 - 14 - 15 - 20 - 11, how will you code DANGER?

(A) 11-7-20-16-11-24 (B) 13-7-20-9-11-25

(C) 10-7-20-13-11-24 (D) 13-7-20-10-11-25

Solution:

Clearly, every letter is assigned a numerical code obtained by adding 6 to the numeral denoting the position of that letter in the English alphabet.

Thus, A is coded as (1 + 6) i.e. 7, B as (2 + 6) i.e. C as (3 + 6) i.e. 9, ..., M as (13 + 6) i.e. 19, ... Z as (26 + 6) i.e. 32.

Since, D, A, N, G, E, R are 4th, 1st, 14th, 7th, 5th and 18th letters in the English alphabet, so their respective codes are (4 + 6), (1 + 6), (14 + 6), (7 + 6), (5 + 6), (18 + 6) i.e. 10, 7, 20, 13, 11, 24. So the code for DANGER is 10 - 7 - 20 - 13 - 11 - 24.

Hence, the answer is (C).

Type - 4: Substitution

Here some particular words are assigned to certain substituted names. Then a question is asked that is to be answered in the substituted code language.

Illustration

If ‘cook’ is called ‘butler’, ‘butler’ is called ‘manager’, ‘manager’ is called ‘teacher’, ‘teacher’ is called 'clerk', ‘clerk’ is called ‘principal’, who will teach in a class?

(A) Cook (B) Butler (C)Manager (D) Teacher (E) Clerk

Solution:

Clearly, 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).

Type - 5: Deciphering Message Word Codes

Here some messages are given in the coded language and the code for a particular word or message is asked. To analyse such codes, any two messages bearing a common word are picked up. The common code-word will thus represent that word. Proceeding similarly by picking up all possible combinations of two, the entire message can be decoded and the codes for individual words found.

Illustration

If in a certain language, 'Oka Peru' means 'fine cloth'; 'Meta Lisa' means 'clear water' and 'Dona Lisa Peru' means 'fine clear weather', which word in that language means 'weather'?

(A) Peru (B) Oka (C) Meta (D) Dona

Solution:

Fine cloth –Oka Peru .....(i)

Fine clear weather – Dona Lisa Peru .....(ii)

Clearwater –Meta Lisa .....(iii)

⇒ Fine = Peru

By statements (ii) and (iii) clear= Lisa.

From statement (ii) and (iii), Lisa means clear and from statements (i) and (ii) Peru means fine so weather will be Dona with the help of statement (ii).

Type - 6: Deciphering Number and Symbol codes for messages

Here a few groups of numbers/symbols, each coding a certain message, are given. Through a comparison of the given coded messages, taking two at a time, the candidate is required to find the number/symbol code for each word and then formulate the code for the given message.

Illustration

In a certain code language, '234'means 'spark and fire', '456'means 'spark is cause' and '258' means 'fire is effect'. Which of the following numerals is used for 'cause'?

(A) 3 (B) 4 (C) 5 (D) 6

Solution:

In the first and second statements, the common code digit is '4' and the common word is 'spark'. So, '4'means 'spark'. In the second and third statements, the common code digit is '5' and the common word is 'is'. So, '5'means 'is' so, for 'cause' the code digit is 6.