CODING – DECODING TIPS AND TRICKS

Some of the major types of coding logics are

- Constant addition in the position of letters
- Constant subtraction in the position of letters.
- Denoting the position of letters in the whole alphabetical order.
- Addition of the positions of all the letters to make code for the word.
- Constant addition and subtraction alternatively in the position of all the letters.
- Square of the number of letters in the word.
- Arranging the letters in the alphabetical order.
- Arrangement of letters in the word given in reverse order.
- Interchanging each pair of the letters, in the given word.
- Constant addition and then reversal of the letters to form the final word.

Now we will discuss some of the important types of coding with the help of examples.

Note: It is advised that the student should learn the alphabetical order of all the letters.

Some important coding decoding tricks & tips:

1. **THE ALPHABET & EJOTY CONCEPT:**
   There are exactly 26 letters in English alphabets.
   A-Z (1 to 26).
   A-1, B-2; C-3, and so on.

We should learn numbering of every letter. So for better convenience, you can learn two words which help you to remember numbering of letters which are given below:

A	B	C	D	E
F	G	H	I	J
K	L	M	N	O
P	Q	R	S	T
U	V	W	X	Y
		Z		

5	10	15	20	25
E	J	O	T	Y

Reverse EJOTY: When we start count Alphabets from the Z to A, this is called reverse EJOTY It can be easily explained by an example given below:

Example: If code for AYNA IS 'ZBMZ, find the code for NUTS.
According to alphabet series, the position of A-1, Y-25, N-14, A-1

In reverse EJOTY, Z-1, B-25, M-14, Z-1
Or we can also say that,

1	25	14	1
A	Y	N	A
+			
Z	B	M	Z
26	2	13	26

Sum of every letter & its corresponding coded letter is 27. Therefore, code for NUTS is 'MFGH'.

Types of Coding – Decoding:

Type 1: Letter Coding.
Type 2: Number Coding.
Type 3: Substitution.
Type4: New Type of Coding Detailed Explanation

Type 1: LETTER CODING:
In this type, 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.

Case1: To form the code for another word
If in a certain language MYSTIFY is coded as NZTUJGZ, how is NEMESIS coded in that language?
Sol. Clearly, each letter in the word MYSTIFY is moved one step forward to obtain the corresponding letter of the code.
MYSTIFY
+1↓
NZTUJGZ
So, in NEMESIS, N will be coded as O, E as F, M as N and so on. Thus, the code becomes OFNFTJT.

Case 2: To find the word by analyzing the given code (DECODING)
If in a certain language CARROM is coded as BZQONL, which word will be coded as HOUSE?
Sol. each letter of the word is one step ahead of the corresponding letter of the code
BZQONLHOUSE
+1↓
CARROMIPVTF
So, H is coded as I, O as PU as V, S as T and E as F. HOUSE is coded as IPVTE.

Type 2: 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 1: When numerical code values are assigned to words
If in a certain language A is coded as 1, B is coded as 2, and so on, how is BIDDIC is coded in that code?

Sol.
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

Case 2: Number to letter coding.
In a certain code, 2 is coded as P. 3 as N, 9 as 0.5 as R. 4 as A and 6 as B. How is 599423 coded in that code?
Sol. Clearly as given 5 is coded as R. 9 as Q, 4 as A, 2 as P. 3 as N. So, 599423 is coded as RQQAPN

Type 3: SUBSTITUTION
In this section an object names are substituted with different object names. We should carefully trace the substitution and answer given question.

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For Example:
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 color of human blood?
Sol. The color of the human blood is 'red', and as it is given that 'red' is called yellow'. So, the color of human blood is yellow'.

Type 4: NEW TYPE OF CODING
This is a kind of coding recently included in the Reasoning section. In this type of questions either alphabetical code values are assigned to symbols or symbols are assigned to alphabets. The candidate is required to analyze the code as per direction.

For Example:
In a certain code **'TOME'** is written as **'@ $* ?'** and '**ARE'** is written as **'· £?'** How can **'REMOTE'** be written in that code?
Sol. From the data we have T = @, O = S, M = *, E = ? and A = · , R = £, E = ?
Hence **REMOTE** is coded as **£ ? * $ @ ?**

Some Useful Tricks:
Trick 1: Use EJOTY to remember position of alphabet (Total=26) in series.
coding
Opposite position of letters (A = 26, B = 25 . . . . . Z = 1)
Opposite of each letter (A is opposite to Z and B is opposite to Y and C is opposite to X . . . . . and so on)

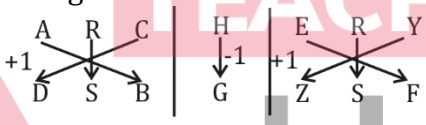
Trick 2: The reverse order can be obtained by subtracting the position from 27 say
Example: Opposite of M = 13 is 27 - 13 = 14 = Fourteen = N

(I) Coding - Decoding by Letter Shifting:
In this method, one or more English words are given with their respective codes. The coding is based on shifting the positions of the individual letters based on their place in the English Alphabet. You have to identify a common pattern and apply the same pattern to the word in the question to find its code or apply the reverse pattern to the given code to find the original word.

Example 1: In a certain code **'MONARCHY'** is written as **'NPOBSDIZ'**. How will **'STANDARD'** be written in that code?
Solution: In this question, each letter of **'MONARCHY'** is simply replaced by its next letter as per English Alphabet. M + 1 = N;
O + 1 = P;
N + 1 = O;
H + 1 = 1;
Y + 1 = Z;
Based on similar pattern, code for **'STANDARD'** is **'TUBOEBSE'**. Let's take a slightly more complicated example.

Example 2: In a certain code **'ARCHERY'** is written as **'DSBGZSF'** How will the word **'TERMITE'** be written in that code?

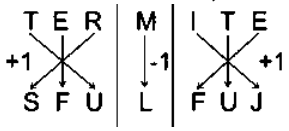
Solution and Steps Involved:
1. Write down the letters in one line and its code in the line below.
2. Analyze the coding pattern by matching the code with the word.



We can see that the word has been divided into three parts, where letters of the first and third parts are increased by 1 position and then reversed among themselves while the lone letter in the middle part is decreased by 1.

NOTE: Here increasing or decreasing by 'n place means, exchanging the current letter with a letter that is 'n places to the right or left, respectively, in the English Alphabet.

3. Once the pattern has been identified, find the code for the word asked in the question:



Hence, code for **'TERMITE'** is **'SFULFUJ'**
Variations:

A. Just the jumbling of letters with no substitution by any other letter: The jumbling can be done directly or by dividing the given word in multiple parts and jumbling each part separately.

(II) Coding Letters of a Word:
In these questions, the letters of one or more words are coded in terms of symbols/digits/other letters. You have to identify the code of the individual letter by comparing and based on this, find out the code for given word.

Types:

A. There is a one to one relation between letters and the code, which you can identify by just comparing letters with the code of same place value.

Example 3: In a certain code **'CAMPHOR'** is written as **'6$3#152'** and **'SAKE'** is written as **'@$98'**. How is **'MORSE'** written in that code language?

Solution and Steps Involved:

1. Write down letters and codes corresponding to their position
2. Check common letters in given words and their codes.
3. If the common letter has same code each time, highlight the letters that are part of the word that has been asked in the question.

   C → 6 S → @
   A → $ A → $
   M → 3 K → 9
   P → # E → 8
   H → 1 O → 5
   R → 2
4. Rewrite the word in the question and corresponding codes below each letter. (Remember here order of letters will matter.)

   M O R S E
   3 5 2 @ 8

   Hence, the code for **'MORSE'** is **'352@8'**.

Variations:

1. Letters are coded as other letters without any letter shifting or jumbling. These may appear tough as you might be looking for letter shifting patterns. But there is only direct correspondence between the letters of the word and the letters of the code and no other relationship exists.

Example 4: If **CARING** is coded as **MPDRGF**, and **SHARES** is coded as **XLPDUX**, how could **CASKET** be possibly coded in the same code?

(a) MPXBUN
(b) MXPGUN
(c) MPDDUX
(d) LMPGFR
(e) FGRDXP

Solutions and Steps Involved:

1. First establish correspondence.
2. Find the common codes.
3. If the common letter has same code each time, highlight the letters that are part of the word that has been asked in the question.

4. Rewrite the word in the question and corresponding codes below each letter. (Remember here order of letters will matter.)
5. If there are letters in the question word whose codes you can't find, then leave them blank.
   CASKET
   MPXU
6. For the possible answer, check the options. The blank spaces must not be filled with any of the remaining codes from the given question. It must be filled with new codes. There will be only one such answer. In the given question, the blank spaces cannot be filled with D.R.GF or L.
   From the given options, we can see that the answer is CASKET → MPXBUN.