CODING DECODING

- Coding is a process which is used to encrypt a word in a particular pattern following some set of rules.

- Decoding is a process to decrypt the given code into its original form.

- Positional Value of Alphabets in forward direction:

Alphabet	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
Positional Value	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

- Positional Value of Alphabets in reverse direction:

Alphabet	Z	Y	X	W	V	U	T	S	R	Q	P	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
Reverse Value	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

- **Memory Tip - "EJOTY" will help you to find nearby letters quickly.**

E	J	O	T	Y
5	10	15	20	25

Letter to Letter Coding

In this section, the alphabets of a word are coded with the help of different operations like addition, subtraction, interchanging etc. and we need to find the code of another word using the same operation.

Q. In the following questions find out the alternative which will replace the question mark.

ENGLISH: FOHNHRG :: SCIENCE ?

A. Here, ENGLISH is written as following: And same will be followed for SCIENCE,

Thus, TDJGMBD is the correct answer.

Q. In a certain code language, "if FRIEND" is written as "UIRVMW", then how is "TRADER" written in that code language?

A. The pattern used here is opposite to that letter

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

So, the TRADER is coded as GIZWVI. **Hence, GIZWVI is the correct answer.**

Trick you can use:
Follow the given steps to find the logic quickly.
Step 1: Check if the opposite letters are given in the code.
Step 2: Check if the position of letters is interchanged.
Step 3: Check if operation like addition or subtraction is applied.

Letter to Number Coding

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

Q. In a certain code language, "GIVE" is written as "810236" and "BOND" is written as "316155". How is "CREW" written in that code language?

A. The pattern follows here is,

Hence '419624' is correct answer.
Q. If Y = 50, SEA = 50, then 'YACHT' will be equal to?

A. The pattern followed is,
The place value of Y is 25 → 25 × 2 = 50
And,
For, SEA
The place value of S, E and A are 19, 5 and 1 respectively.
SEA → (19 + 5 + 1) × 2 = 50
Similarly,
For, YACHT
The place value of Y is 25, 25 + 25 = 50
YACHT → (25 + 1 + 3 + 8 + 20) × 2 = 114

Trick you can use:
Follow the given steps to find the logic quickly.
Step 1: Check if the positional values of letters are given in the code.
Step 2: Check if the position of positional values of letters are interchanged.
Step 3: Check if the positional values of letters in reverse alphabetical series is given.
Step 4: Check if the position of positional values of letters (in reverse alphabetical series) are interchanged.
Step 5: Check if operation like addition, subtraction or multiplication is applied.

Substitutional Coding

In this section, words are encrypted or coded with the substitute word.

Q. 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. The logic follows here is:
A person hears from the 'ear'
But 'ear' is called as 'nose'
Thus, the correct answer is 'nose'.

Chinese Coding

In this section, a few statements consisting of same words but in different order will be coded as words or symbols or letters And you need to find the codes of words by finding the common words in different statements as the code of a word in both the statement will be same.

Q. Study the following information carefully and answer the given questions. In a certain code language:

'si ta mi' means 'Seeta is dancing',
'ge ma ta ki' means 'jewellery shop is there',
'si la za' means 'Seeta likes sweet',
'za ta ki' means 'sweet is there'.

Which of the following means 'jewellery' in that language?

A. From the statement:
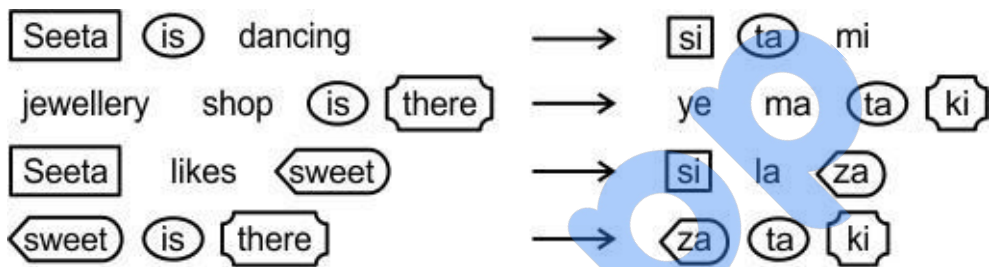
'si' means 'Seeta'
'ta' means 'is'
'mi' means 'dancing'
'ki' means 'there'
'la' means 'likes'
'za' means 'sweet'

Hence, either 'ge' or 'ma' means 'jewellery' in that language.

LSN Coding

In this section, words of different statements are coded with Letter, symbol and number using different operations. You need to find the logic used for letter, symbol and number.

Directions: Study the information below and answer the following question.

In a certain code language,
'The rank wombat waves' is written as '%e3 $k4 @t6 @s5'.
'An alcoholic advertises rank' is written as '!n2 !c9 !s10 $k4'.
'Another terrifying viewpoint sleeps' is written as '!r7 %g10 *t9 (s6'.
'Nidhi sleeps at nine' is written as '^i5 (s6 !t2 ^e4'.

Q. How would the word 'sleeps' be coded?

A. According to the question:
- The first letter is a coded symbol of the first letter.
- The second letter is the last letter of the word.
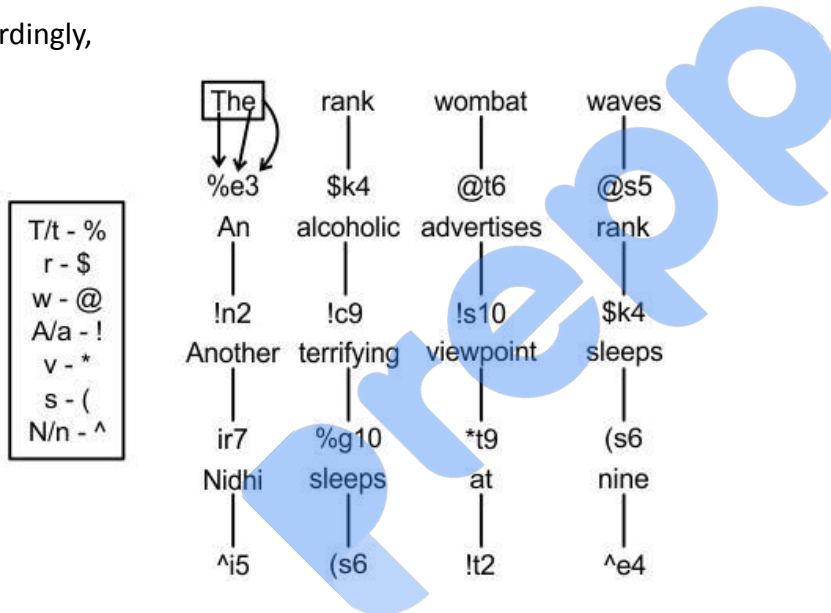- The third letter is the number of letters in the word.

E.g. *y2 = my
* represents m
'y' is last letter
2 is number of letters

Accordingly,

Therefore, 'sleeps' would be coded as (s6.

Conditional Coding

In this section, a few operations will be given and you need to apply all the given conditions to find the code of given word.

Direction: Study the following information and answer the given questions.

In alphabetical series A-Z each letter except vowels is assigned as a place value of the letter (for ex - A is coded as 1, C-3, D-4 …I-9) and place value of letters from J are added (for ex – J-10 = 1+0 = 1, K-11 =

1+1 = 2…………..Z-26 = 2+6 = 8).

In coded language:

"Always Work Hard" is coded as – 8194H& 5692H& 1351710L@
"Achieve Your Dreams" is coded as –4951410L@ 1389545N$ 5639H&.
"Study All Subjects" is coded as – 133F& 1032153210R@ 102347J&.

Conditions:
I. If the first letter of the word is vowel and the last letter is consonant then the vowel is coded as the next letter comes in alphabetical series and the consonant is coded as the previous letter comes in alphabetical order.
II. If both first and last letter of the word are vowel then the codes of both the vowels are replaced by *.
III. If first letter of the word is consonant and last letter is vowel then both the codes of both the letters is coded as the code of vowel.
IV. If both first and last letter of the word is consonant then the codes of both the consonants are interchanged.

Q. What can be the code of "Endeavor"?

A. Code for 'Endeavor' → 55451469P$
In this statement the only condition (i) is followed,
Hence 'Endeavor' is coded as F545146QP$.

Directions: In each question below is given a group of numbers / symbols followed by five combinations of letter codes numbered (1), (2), (3), (4) and (5). You have to find out which of the combinations correctly represents the group of numbers / symbols based on the following coding system and the conditions and mark the number of that combi- nation as your answer:

Letter	B	A	D	E	F	H	J	K	M	I	U	O	W	L	P
Letter Code	6	$	7	8	#	1	2	*	%	3	©	4	9	@	5

Conditions:
I. If the first letter is a vowel and the last letter is a consonant, then their codes are to be interchanged.
II. If both the first and the last letters are consonants, then both are to be coded as 'β'.
III. If the first letter is a consonant and the last letter is a vowel, then both are to be cod- ed as the code for the vowel.

Q. IBHWPO

A. According to the statement:

Given table:

Letter	B	A	D	E	F	H	J	K	M	I	U	O	W	L	P
Letter Code	6	$	7	8	#	1	2	*	%	3	©	4	9	@	5

According to the given conditions,

Rule No.	Condition	Result
1	If the first is a vowel and the last letter is a consonant	Their codes are to be interchanged
2	If both the first and the last letters are consonants	Both are to be coded as β
3	If the first letter is a consonant and the last letter is a vowel	Both are to be coded as the code for Vowel

Here, simply write the code as no rule applies. Therefore, IBHWPO will be coded as 361954.

Clock Coding

In this section, number between 1 to 12 are coded and the questions will be asked on the basis of time.

Direction: Study the information carefully and answer the questions given below.

In a coded language A, B, %, @, & and # represents 2, 3, 4, 6, 7 and 9 respectively. When any two symbols used together one of them represents the hour hand and other represents the minute hand of a clock.
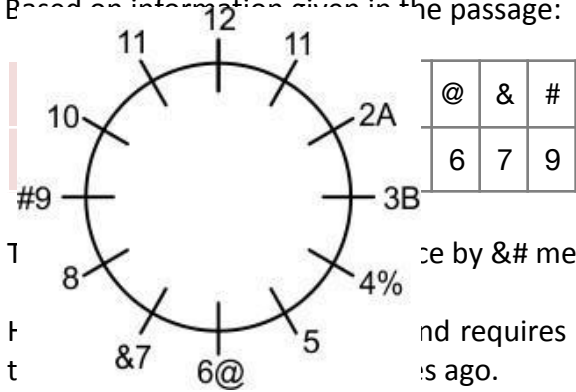
For example:
A B represents 2:15 AM in clock.

%@ represents 4:30 AM in clock.

Note – Consider all time at AM.

Q. A person is required to reach a place by &#. At what time he left his house if he requires a travel time of sixty minutes and reaches fifteen minutes prior?

A. Based on information given in the passage:

@	&	#
6	7	9

T...........ce by &# means by 7:45 AM.

H...........nd requires 60 minutes of travel
t...........s ago.

Hence, he would have left around 6:30 AM.

Clock Coding

In this section, decimal numbers are coded by binary numbers i.e., 0 and 1.

Directions: In a certain number system there are only two notations to represent numbers: A and B. 0 is represented by A and 1 by B. The subsequent numbers are represented in the following manner:
2 is represented as BA,
3 is represented as BB,
4 is represented as BAA,
5 is represented as BAB and so on.

Based on this coded language, answer the following questions.

Q. Which of the following is the average of BBBB and BBBBB?

A. According to the given information,

Number	0	1	2	3	4	5
Code	A	B	BA	BB	BAA	BAB

Simplified Code	0	1	10	11	100	101

So, this entire code language is based on only 2 symbols A and B, i.e., 0 and 1.

Logic:

On observation, we notice that starting from the rightmost digit, each digit is multiplied with corresponding power of 2, starting with 20, and then all these terms are added to obtain the number in decimal system.

[The rightmost term is multiplied with 20, second term from right is multiplied with 21, third term from right is multiplied with 22 and so on]

$2 \rightarrow 10 \Rightarrow (0 \times 2^0) + (1 \times 2^1) = (0 \times 1) + (1 \times 2) = 0 + 2 = 2$
$3 \rightarrow 11 \Rightarrow (1 \times 2^0) + (1 \times 2^1) = (1 \times 1) + (1 \times 2) = 1 + 2 = 3$
$4 \rightarrow 100 \Rightarrow (0 \times 2^0) + (0 \times 2^1) + (1 \times 2^2) = (0 \times 1) + (0 \times 2) + (1 \times 4) = 0 + 0 + 4 = 4$
$5 \rightarrow 101 \Rightarrow (1 \times 2^0) + (0 \times 2^1) + (1 \times 2^2) = (1 \times 1) + (0 \times 2) + (1 \times 4) = 1 + 0 + 4 = 5$
and so on.

Logic:

BBBB $\rightarrow$ 1111 which is the binary equivalent of
$(1 \times 2^0) + (1 \times 2^1) + (1 \times 2^2) + (1 \times 2^3) = 15$.

BBBBB $\rightarrow$ 11111 which is the binary equivalent of
$(1 \times 2^0) + (1 \times 2^1) + (1 \times 2^2) + (1 \times 2^3) + (1 \times 2^4) = 31$.

15 + 31 = 46

46/2 = 23

Hence, 23 is the correct answer.

Practice Questions

1. **In a certain code language, "blue" means "car", "car" means "wood", "wood" means "rice", "rice" means "chair" and "chair" means "table". What do we eat?**

   1) Blue
   2) Wood
   3) Chair

4) Rice
5) None of these

Correct Answer: 3

Explanation:

We eat rice and here "rice" means "chair".

Thus, the answer is chair.

2. **In a certain code language, 'round' is written as 'tall', 'tall' is written as 'red', 'red' is written as 'wood' is written as 'bread' and 'bread' is written as 'soil'. What do we eat in breakfast?**

1) Tall
2) Wood
3) Bread
4) Soil
5) Red

Correct Answer: 4

Explanation:

We eat 'bread' in breakfast.

Here, 'bread' is coded as 'soil'.

Hence, 'soil' is the correct alternative.

3. **In a certain code language, if MONITOR = 49 and NARCOTIC = 64. How will the 'STUPENDOUS' be written in that language?**

1) 49
2) 88
3) 64
4) 100
5) 81

Correct Option: 4

Explanation:

MONITOR: Number of words = 7 and $(7)^2$ = 49

NARCOTIC: Number of words = 8 and $(8)^2$ = 64

STUPENDOUS: Number of words = 10 and $(10)^2$ = 100.

Hence, STUPENDOUS is coded as 100.

4. **In a certain code language "EASY" is written as "5117". In the same code language, how will "BEAM" be written as?**

   1) 4512
   2) 4567
   3) 2513
   4) 2514
   5) 2563

   Correct Option: 4

   Explanation:

   EASY → E is the 5th alphabet in the series
   A is the first alphabet in the series
   S is the 19th alphabet, which makes it (1+9 = 10 ⇒ 1+0 = 1)
   Y is the 25th alphabet, which makes it (2+5 = 7)
   Hence, EASY = 5117

   Similarly,
   BEAM → B is the 2nd alphabet in the series
   E is the 5th alphabet in the series
   A is the 1st alphabet in the series
   M is the 13th alphabet, which makes it (1+3 = 4)
   Hence BEAM = 2514

5. **"SPECIAL" is written as "65" in a certain code language what will "CONNECT" be coded as?**

   1) 70
   2) 64
   3) 32
   4) 78
   5) 74

   Correct Option: 5

Explanation:

SPECIAL → Sum of the place value of each alphabet in the alphabetical order
SPECIAL = 19+16+5+3+9+1+12 = 65
So, CONNECT = 3+15+14+14+5+3+20 = 74

Directions (Q6 - Q10): Study the data given below and answer the following questions:

'Royal Monarch Regal' is written as @ # *,
'Regal legacy Gold' is written as * % ?,
'Hope Gold Life' is written as % & $,
'Regal Monarch Morals' is written as # * ∀

6. **What will be the code for Regal?**

   1) %
   2) *
   3) $
   4) #
   5) ?

   Correct Option: 2

7. **What will be the code for "Gold Legacy"?**

   1. # &
   2. % #
   3. ? %
   4. * ∀
   5. & $

   Correct Option: 3

8. **Which word is coded as #?**

   1) Moral
   2) Life
   3) Regal
   4) Monarch
   5) Legacy

   Correct Option: 4

9. **In the given coded language, which of the following words has been coded as &?**

1) Gold
2) Life
3) Hope
4) Either '2' or '3'
5) None of the above
Correct option: 4

10. What is the code for royal?

1) %
2) @
3) ?
4) *
5) ∀

Correct Option: 2

Explanation (Q6 – Q10):

regal	*
gold	%
legacy	?
hope	$ / &
monarch	#
moral	∀
royal	@
life	& / $