

LOGICAL REASONING

MODULE 7 – CODING AND DECODING

1. If, 1111 = r, 2222 = t, 3333 = e, 4444 = n, 5555 = ?

(a) w

(b) x

(c) y

(d) z

**Solution:**

$1 + 1 + 1 + 1 = 4 = \text{Four}$ . Last letter of Four is 'r'

$2 + 2 + 2 + 2 = 8 = \text{Eight}$ . Last letter of Eight is 't'

..

..

$5 + 5 + 5 + 5 = 20 = \text{Twenty}$ . Last letter of Twenty is 'y'. Hence, the answer is option (c).

2. If in a coded language,

$45 \rightarrow 41$

$23 \rightarrow 13$

$52 \rightarrow 29$

$71 \rightarrow 50$

$29 \rightarrow ?$

(a) 23

(b) 26

(c) 53

(d) 85

**Solution:**

$45 = 4^2 + 5^2 = 41$

$23 = 2^2 + 3^2 = 13$

$52 = 5^2 + 2^2 = 29$

$$71 = 7^2 + 1^2 = 50$$

$$\text{Similarly, } 29 = 2^2 + 9^2 = 85$$

3. EMBLEM is coded as 216, CRUDE is coded as 125, Similarly, CRICKET will be coded as?

- (a) 225                      (b) 196                      (c) 256                      **(d) 343**

***Solution:***

Coding logic is: (No. of letters in the word)<sup>3</sup>

$$\text{EMBLEM} = \text{No. of letters is } 6 \rightarrow 6^3 = 216$$

$$\text{CRUDE} = \text{No. of letters is } 5 \rightarrow 5^3 = 125$$

$$\text{CRICKET} = \text{No. of letters is } 7 \rightarrow 7^3 = 343$$

4. If GO = 32 & SHE = 49 then SOME will be equal to?

- (a) **56**                      (b) 58                      (c) 62                      (d) 64

***Solution:***

If we count letters till the end of the alphabet including that letter in reverse order, then

$$G = 20 \text{ and } O = 12, \text{ total} = 32$$

$$S = 8, H = 19 \text{ and } E = 22, \text{ total} = 49$$

$$\text{So, SOME} = 8 + 12 + 14 + 22 = 56$$

5. GOOD is coded as 164 and BAD is coded as 21. If UGLY is coded as 260 then JUMP will be coded as?

- (a) **240**                      (b) 140                      (c) 136                      (d) 180

***Solution:***

$$G O O D = 164 \text{ ( } \mathbf{41} * 4 \text{ letters)}$$

$$7 + 15 + 15 + 4 = \mathbf{41}$$

Similarly,

$$B A D = 21 \text{ ( } \mathbf{7} * 3 \text{ letters)}$$

$$2 + 1 + 4 = \mathbf{7}$$

$$U G L Y = 260 \text{ ( } \mathbf{65} * 4 \text{ letters)}$$

$$21 + 7 + 12 + 25 = \mathbf{65}$$

$$\mathbf{J U M P} = ? * 4$$

$$10 + 21 + 13 + 16 = 60$$

$$\mathbf{JUMP} = 60 * 4 = 240$$

6. If MAPLE is coded as VOKZN then how will CAMEL be coded?

- (a) OVNZF                      (b) OUNZX                      (c) **OVNZX**                      (d) XZNVO

**Solution:**

Position of M is 13 in alphabet and the reverse 13<sup>th</sup> alphabet is N

A – 1<sup>st</sup> Z – 1<sup>st</sup> reversely.

After this NZKOV is VOKZN

Now for CAMEL it will be OVNZX

7. If SAVOURY is coded as OVUARSY then how will RADIATE be coded?

- (a) AIDARET                      (b) IDARATE                      (c) ARIADTE                      (d) **IDAATRE**

**Solution:**

Comparing the positions of letters S, A, V, O, U, R, Y in SAVOURY and OVUARSY, letters at 1, 2, 3, 4, 5, 6, 7 position in SAVOURY have their sequence changed as 4352617 in OVUARSY (4<sup>th</sup> letter O comes at 1<sup>st</sup> position, 3<sup>rd</sup> at second,...)

Similarly, just a positioning the letters of RADIATE, i.e. keeping 4<sup>th</sup> letter (I) at 1<sup>st</sup> position, 3<sup>rd</sup> (D) at 2<sup>nd</sup> positions and so on we get IDAATRE

8. If BURNER is coded as CASOIS then how will ALIMENT be coded?

- (a)BKJLFMU                      (b) EKOLIMS                      (c) **EMONIOU**                      (d) BRJSFTU

**Solution:**

Take the next consonant or vowel in alphabetical sequence.

B – C (next consonant in sequence)

U – A (AEIOU, U cycles back to beginning, or A)

R – S

N – O

E – I (next vowel)

R – S

Therefore,

A – E

L – M

I – O

M – N

E – I

N – O

T – U

EMONIOU

9. In a particular language, “TOM KUN SUD” means ‘Boys are playing’; ‘KUN JO MOP’ means ‘Boys and Girls’ and “MUT TOM KO” means ‘Life is Beautiful’. How is Boys coded as?

- (a) TOM                      (b) **KUN**                      (c) MUT                      (d) JO

**Solution:**

In the first two sentences, the only common word is Boys and the only common word in the coded form is KUN. Hence, Boys is coded as “KUN”.

10. If the word “SCHOOL” is coded as “TFMVXW”, what will “COLLEGE” be coded as?

- (a) DRQSRNR              (b) DRSQRNR              (c) **DRQSNRR**              (d) DRSQNRR

**Solution:**

The pattern is

S	C	H	O	O	L
+1	+3	+5	+7	+9	+11
T	F	M	V	X	W

Similarly,

C	O	L	L	E	G	E
+1	+3	+5	+7	+9	+11	+13

D R Q S N R R

11. If the word “GREAT” is coded as “HTHEY”, then which word will be coded as “ZKCLUP”?

- (a) **YIZHPJ** (b) YZIHPI (c) YIZHJP (d) YPHZIJ

**Solution:**

Here the coding pattern is +1 +2 +3 +4 +5 +6. Performing the reverse operation [-1 -2 -3 -4 -5 -6], the original word for “ZKCLUP” is “YIZHPJ”.

12. If the word “ENGINEERING” is represented as “FOHJOFFSJOH”, then the word “SUCCESS” will be represented as?

- (a) TVDFDTT (b) TDVDTFT (c) TVDDHTT (d) **TVDDFTT**

**Solution:**

The pattern is

E	N	G	I	N	E	E	R	I	N	G
+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1
F	O	H	J	O	F	F	S	J	O	H

Similarly,

S	U	C	C	E	S	S
+1	+1	+1	+1	+1	+1	+1
T	V	D	D	F	T	T

**Directions for Questions (13 – 17):** Study the following information to answer the given questions:

In a certain code ‘best way to win’ is written as ‘ad mi ja no’, ‘the way to hell’ is written as ‘ku ja ig ad’. ‘win of the day’ is written as ‘be ku zo mi’ and ‘to sell of night’ is written as ‘be li ya ja’.

13. What is the code for ‘sell’?

- (a) be (b) li (c) ya (d) **Cannot be determined**

14. ‘mi’ is the code for

- (a) to (b) **win** (c) way (d) of

15. What is the code for ‘best’?

- (a) ad (b) mi (c) **no** (d) ja

16. Which of the following may represent 'hell is way'?

- (a) **ad re ig** (b) ig li re (c) re ad be (d) ig py ya

17. Which of the following represents 'of the way'?

- (a) rni be no (b) **ku be ad** (c) ku be ya (d) mi ku be

**Solution:**

WORD	CODE
night	li/ya
sell	ya/li
day	Zo
of	Be
Hell	Ig
The	Ku
Win	Mi
to	Ja
Way	Ad
Best	No

18. In a certain code language, '134' means 'good and tasty'; '478' means 'see good pictures' and '729' means 'pictures are faint'. Which of the following digits stands for 'see'?

- (a) 9 (b) 2 (c) 1 (d) **8**

**Solution:**

In the first and second statements, the common code digit is '4' and the common word is 'good'.

So, '4' stands for 'good'.

In the second and third statements, the common code digit is '7' and the common word is 'pictures'.

So, '7' means 'pictures'.

Thus, in the second statements, '8' means 'see'.

19. 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 (b) Green (c) **Yellow** (d) Violet

**Solution:**

The colour of human blood is red; and red is coded as yellow. Hence, the answer is option (c) – Yellow.

20. If 'sky' is called as 'star', 'star' is called as 'cloud', 'cloud' is called as 'earth', 'earth' is called as 'tree', and 'tree' is called as 'book', then where do the birds fly?

- (a) Cloud                      (b) Sky                      (c) **Star**                      (d) Data Inadequate

**Solution:**

Birds fly in the sky. The code for sky is star. Therefore, birds fly in the 'star'.

21. In a certain language “DELHI” is written as 451289. How is “MUMBAI” coded in that language?

- (a) **132113219**                      (b) 5105108                      (c) 76765                      (d) None of these

**Solution:**

D is the 4<sup>th</sup> letter, E is the 5<sup>th</sup>, L is the 12<sup>th</sup> and so on. Hence, MUMBAI is equivalent to 132113219.

22. If, NO = 210, SO = 285 then ANI = ?

- (a) 185                      (b) 258                      (c) **126**                      (d) 512

**Solution:**

NO  $\rightarrow 14 \times 15 = 210$  (Note N = 14<sup>th</sup> letter & O is the 15<sup>th</sup> letter)

SO  $\rightarrow 19 \times 15 = 285$  (S is the 19<sup>th</sup> letter and O is the 15<sup>th</sup> letter)

Hence, ANI  $\rightarrow 1 \times 14 \times 9 = 126$

23. If ABHI is coded as 23910 and BIG is coded as 3108, then how is RAM coded in the same language?

- (a) **19214**                      (b) 18113                      (c) 17112                      (d) 19241

**Solution:**

R – 18<sup>th</sup> letter  $\rightarrow 18 + 1 = 19$ ; A – 1<sup>st</sup> letter  $\rightarrow 1 + 1 = 2$ ; M – 13<sup>th</sup> letter  $\rightarrow 13 + 1 = 14$

RAM = 19214

24. If in a certain language, ENTRY is coded as 12345 and STEADY is coded as 931785, then state which is the correct code for NEATNESS?

- (a) 25196577                      (b) **21732199**                      (c) 21362199                      (d) 21823698

**Solution:**

From the given codes, we can infer that N $\rightarrow$ 2; E $\rightarrow$ 1; A $\rightarrow$ 7; T $\rightarrow$ 3; N $\rightarrow$ 2; E $\rightarrow$ 1; S $\rightarrow$ 9

25. In a certain language, 'sun shines brightly' is written as 'ba lo sul', 'houses are brightly lit' as 'kado ula ari ba' and 'light comes from sun' as 'dopi kup lo nro'. What is the code for sun and brightly?

- (a) ba sul                      (b) sul lo                      (c) **lo ba**                      (d) ba nro

**Solution:**

In the first and third statements, the common word is 'sun' and the common codeword is 'lo'. So, 'lo' is the code for 'sun'. In the first and second statements, the common word is 'brightly' and the common code word is 'ba'. So, 'ba' is the code for 'brightly'. Hence, the answer is (c).

## HOME WORK

26. In a certain code, SIKKIM is written as THLJLL, how is TRAINING written in that code?

- (a) SQBHOHOF              (b) UQBHOIOF              (c) UQBHOHOI              (d) **UQBHOHOF**

**Solution:**

In given word, word is increasing and decreasing by one alternatively as,

S +1 T

I -1 H

K +1 L

K -1 J

I +1 J

M -1 L

So in the same way TRAINING will be UQBHOHOF.

27. In a certain code, TOGETHER is written as RQEGRJCT. In the same code, PAROLE will be written as,

- (a) RYPQJG                      (b) RCPQJG                      (c) **NCPQJG**                      (d) NCPQJC

**Solution:**

The letters at the odd positions are moved two steps backward and the letters at even positions are moved two steps forward to get the value.

So PAROLE will be NCPQJG



28. In a certain code “KARMPUTRA” is coded as “AKSNQVUAR”. How is “BHILWARAM” written in that code?

(a) **HBJMXBSMA**

(b) HBJMXBSMN

(c) CIJMXBSBN

(d) None of these

***Solution:***

1<sup>st</sup> and 2<sup>nd</sup> letter are interchanged. Similarly 8<sup>th</sup> and 9<sup>th</sup> letters are interchanged with each other. Rest letters are moved one step ahead. Hence, the required answer is: HBJMXBSMA.

29. In a certain code, COMPUTER is written as RFUVQNPC. How is MEDICINE written in the same code?

(a) MFEDJJOE

(b) EOJDEJFM

(c) MFEJDJOE

(d) **EOJDJEFM**

***Solution:***

The letters of the word are written in reverse order and except the first and the last letter all other letters are move one step forward.

30. In a code language QUEEN is written as OVCFL, then KING is written as

(a) IJLH

(b) MKOF

(c) PHIK

(d) FOKM

***Solution:***

Alphabet Series - 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

The coding follows the rule -2, +1, -2, +1, etc.

That means Q -2 = O

U+1=V

E-2=C, etc.