



REASONING CODING-DECODING



Coding-Decoding

BEST APPROACH TO SOLVE THE QUESTIONS

Coding decoding is the topic which shows continuous changes in it. In each and every exam this topic has gone through various changes. So, to get updated we are providing you some questions based on recent exams. By solving these you may get to know about the latest pattern and you will be able to prepare for the upcoming exams.

Example-1:

Directions (1-5): Study the information and answer the following questions: (IBPS PO Mains-2016)

In a certain code language "fresh mind happy life " is coded as " H#14 M@17 K#33 U@17 " "kashi city of temple" is coded as " S#20 G@28 L@21 O@25" "Sarnath belongs to Varanasi" is coded as"G#27 T#21 G@35 H@31" "One airport in banaras " is coded as "M#20 I#21 R@23 Z#21 "

1. What is the code for 'Excellence' in the given code language?

- (a) X@10
- (b) X#10
- (c) E@10
- (d) E#10
- (e)None of these

2. What is the code for 'University' in the given code language?

- (a) G#46
- (b) T@46
- (c) N@46
- (d) G@46
- (e) None of these

3. What may be the possible code for 'One army' in the given code language?

- (a) M#20 M@26
- (b) M#20 T@26
- (c) N@26 M#20
- (d) M#20 N@26





(e) None of these

4. What may be the possible code for 'Veracity' in the given code language?

(a) T@47

(b) G@47

(c) E@47

(d) G#47

(e) None of these

5. What is the code for 'Ghats in Kashi' in the given code language?

(a) R@21 T#20 G#26

(b) G#26 R@23 S#20

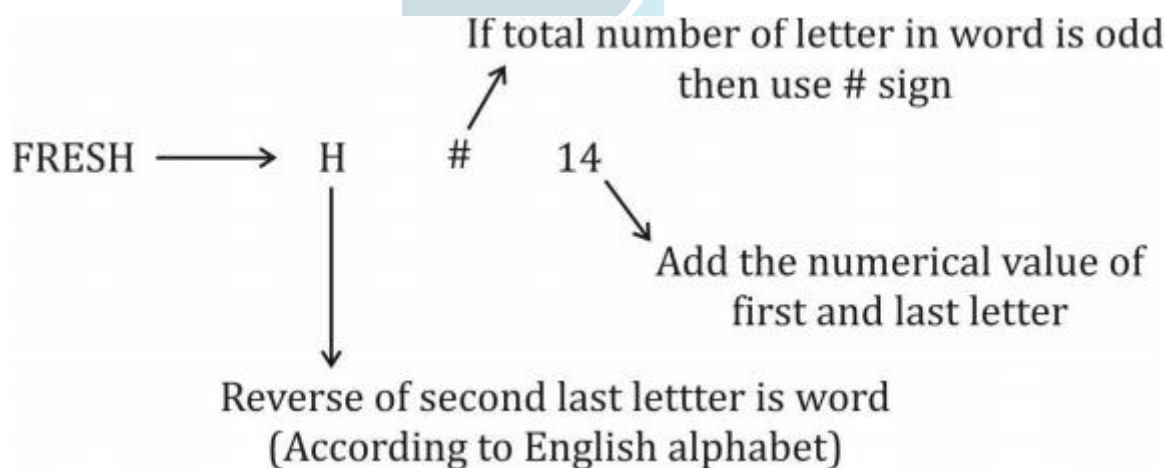
(c) G@26 S#20 R@21

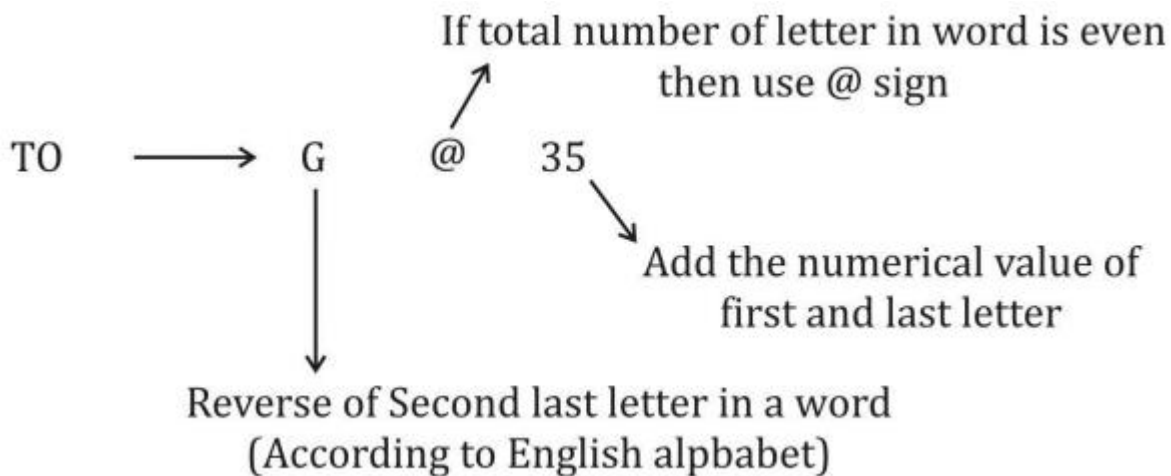
(d) G@26 S#20 R#21

(e) None of these

Explanations (The Approach):

These are the latest pattern of coding-decoding questions. In these questions we are applying following concept:-





1. (a); X@10
2. (d); G@46
3. (d); M#20 N@26
4. (b); G@47
5. (b); G#26 R@23 S#20

Example-2: Direction (1-5): Study the following information and answer the given questions.

In alphabetical series A-Z each letter except vowels is assigned a different number from 1-8 (for ex- B is coded as 1, C-2.....K-8) and again those numbers get repeated (for ex- L-1, M-2.....so on).

Also each vowel is assigned a different symbol viz. #, \$, %, @, &.

For example in coded language-

"She is girl" is coded as - 76% #7 5#61

"What did you like" is coded as - 26\$8 3#3 4@& 1#8%

"It is Opinion" is coded as - #8 #7 @4#3#@3

(i) If both first and last letter of a word is vowel then the codes of both the vowels are interchanged.

(ii) If first letter of a word is vowel and last letter is consonant then both are to be coded as *. (If the word does not satisfy the conditions given above then the letters of that word are to be coded as per the directions given above)

1. What can be the code of 'Nothing perfect'?

- (a) 3@86#53 4%64%28
- (b) 3@68#35 4%64%28



(c) 3@86#35 4%64%38

(d) 3@86#35 4%64%28

(e) None of these

2. What can be the code of 'Exam was easy'?

(a) *3\$* 2\$7 *\$7*

(b) *3\$* 2\$7 %\$74

(c) %3\$2 2\$7 *\$7*

(d) *3\$* 2\$7 \$74%

(e) None of these

3. What can be the code of 'Create style'?

(a) 2#6\$8% 7841%

(b) 26%\$8% 7814%

(c) 26%\$8% 7841%

(d) 26%\$6% 7841%

(e) None of these

4. What can be the code of 'Strength of god'?

(a) 768%3586 4@ 5@3(

b) 786%3586 ** 5@3

(c) 786%3586 @* 5@3

(d) 786%3856 4@ 5@3

(e) None of these



Direction (1-4): In this new pattern coding decoding each letter, except vowel, is assigned a number from 1-8
So, B-1, C-2, D-3, F-4, G-5, H-6, J-7, K8, L-1, M-2, N-3, P-4, Q-5, R-6, S-7, T-8, V-1, W-2, X-3, Y-4, Z-5.

Each vowel is assigned a different symbol as-%, #, \$, @, &. So, for vowels the symbols are - A-\$, E-%, I-#, O- @, U-&.

1. (d);

2. (a); The code will be- *3\$* 2\$7 *\$7*



3. (c);

4. (b); The code will be- '786%3586 ** 5@3'

Example 3: Directions (1-3): Study the information carefully answers the questions given below.

@ Means either hour hand or minute hand is at 8

means either hour hand or minute hand is at 5

\$ Means either hour hand or minute hand is at 4

% means either hour hand or minute hand is at 12

& means either hour hand or minute hand is at 2

£ Means either hour hand or minute hand is at 3

Note: if two symbols are given than by default first symbol is consider as hour hand and second one is consider as minute hand. And all time are consider at PM.

For eg. @# → 8:25 pm.

TM

1. If A takes 25 min to reach railway station and his train is scheduled at #& then at what time should he leave to reach the station 5 minute earlier?

(a) \$%

(b) \$&

(c) &\$

(d) \$@

(e) £\$

2. If a train departed from a station at &£ and it takes 2 hours to reach the destination then when it will reach to the destination?

(a) \$£

(b) \$%

(c) #\$

(d) \$#

(e) £\$



3. A person has to catch a train that is scheduled to depart at '@%'. It takes the person 4 hours and 15 minutes to reach the railway station from his home. At what time should he leave from his home for the railway station to arrive at the station at least 25 minutes before the departure of the train?

- (a) %@
- (b) £\$
- (c) %+
- (d) +@
- (e) None of these

Explanations (The Approach):

Directions (1-3):

1. (d); train is scheduled at= 5 hour 10 minute = #& Time should he leave to reach the station 5 minute earlier=5 hour 10 minute-(25+5) minute= 4 hour 40 minute

2. (a); 4 hour 15 minute

3. (b); Scheduled time of departure of train= @%= 8:00 PM Time for travel+ early arrival= 4 hour 15 minutes + 25 minutes = 4 hour 40 minutes 8:00 PM- 4 hour 40 minutes= 3:20 PM= £\$

Practice Exercise Based on new Pattern

Direction (1-3): Study the following information carefully and answer the given questions:

In alphabetical series A-Z each letter except vowels is assigned a different number from 1-5 (for ex- B is coded as 1, C-2.....G-5)and again those numbers get repeated(for ex- H-1, J-2.....so on).

Also each vowel is assigned a different symbol viz. #, \$, %, @, &.

In coded language-

"Solar Power Energy" is coded as – 5&4@4 2&3#4 #1#455

"Need to Change" is coded as – 1##3 1& 21@15#

"Less Economic Revenue" is coded as – 4#55 #2&1&5\$2 4#2#1%#

Besides the above example, following operations are to be applied for coding the words given in the questions below.

(i) If both first and last letter of a word is consonant then the codes of both the consonant are interchanged.



(ii) If first letter of a word is vowel and last letter is consonant then both are to be coded as *. (If the word does not satisfy the conditions given above then the letters of that word are to be coded as per the directions given above)

1. What can be the code of 'Nuclear Bomb'?

- (a) 4%24#@1 15&1
- (b) 4%42#@1 1&51
- (c) 4%24#@1 1&51
- (d) 4%24@#1 1&51
- (e) None of these

2. What can be the code of 'War and Peace'?

- (a) 3@4 *1* 2#@2#
- (b) 4@3 *1* 2#@2#
- (c) 4@3 @13 2#@2#
- (d) 4@3 *1* 2#2@#
- (e) None of these

3. What can be the code of 'Own life'?

- (a) &3* 4\$4#
- (b)*3* 44\$#
- (c) &33 4\$4#
- (d)*3* 4\$4#
- (e)None of these



DID YOU KNOW?

To expect the unexpected shows a thoroughly modern intellect, it completely goes with the coding decoding nowa-days.

Directions (4-5): Study the following information carefully to answer the given questions. In a certain code language:-

“Mount serious challenge has ended” is written as ‘nu re ch is de’.

“Inform wants credible alternative has” is written as ‘di lt wu is fu’.



“Has Serious Challenge Credible” is written as ‘re ch is di’.

“Credible alternative mount inform” is written as ‘nu lt di fu’.

4. What is the code for ‘alternative’?

- (a) fu
- (b) Di
- (c) lt
- (d) Re
- (e) Either (a) and (c)

5. Which of the following words are coded as ‘Serious challenge has ended’?

- (a) De ch is wu
- (b) wu re ch is
- (c) Re is de ch
- (d) Re is de di
- (e) None of these



DID YOU KNOW?

The coding decoding has changed completely as its pattern has gone through lots of changes and the logic behind it, is always a mystery to go around with. Just go through the given pattern completely otherwise there will be a chance of ambiguity in finding the logic.

Directions: (6-10): Study the information carefully and answer the questions given below. In a certain code language, “country first casino resorts” is coded as “GL18 ER15 FZ9 GV12” “policies may deterrent investors” is coded as “HL11 CZ22 IV11 IM10” “filing process for small businesses” is coded as “FR1 GI12 CL15 EN7 JF9”

6. Which of the following could be the code for “Sanctuary”?

- (a) IZ16
- (b) DZ18
- (c) HZ16
- (d) EA18
- (e) None of these

7. Which of the following words could be coded as ‘EL13’?



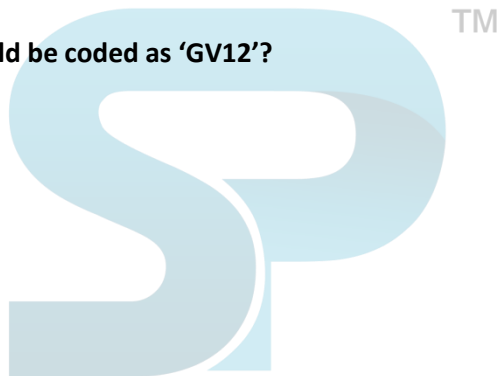
- (a) Mountain
- (b) Courier
- (c) Power
- (d) Banker
- (e) Police

8. Which of the following could be the code for “annual turnover”?

- (a) FM6 HU10
- (b) FM6 HF10
- (c) KP13 LN13
- (d) KP13 NL13
- (e) None of these

9. Which of the following words could be coded as ‘GV12’?

- (a) Beast
- (b) Lucky
- (c) Roller
- (d) Returns
- (e) Ready



10. Which of the following could be the code for “Dairy Milk”?

- (a) EZ10 DR10
- (b) EZ20 DR9
- (c) EZ10 DR17
- (d) CL10 DR7
- (e) EZ20 DR7

DID YOU KNOW?

Recent exam consist of different logics as you may see that the logic varies as per the vowels or consonants present in the word.



Directions (11-13): Study the following information carefully to answer the given questions. In a certain code language: - “telltale heart” is written as ‘V5M V5F I5U’ “raven black cat” is written as ‘S5O C1L D1U’ “premature burial” is written as ‘Q21F F7M’ “pit and pendulum” is written as ‘Q9U B1E F9N’

11. In the given coding language, which of the following will be the code for “raven and cats”?

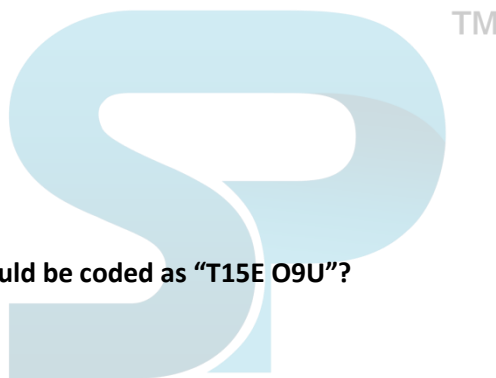
- (a) S5O B1E D1U
- (b) Q9U B1E D1U
- (c) C1L B1E D1U
- (d) S5O Z5T B1E
- (e) None of these

12. In the given coding language, which of the following will be the code for “dark cave”?

- (a) D5R V5F
- (b) D6N Z5L
- (c) Z5L V5F
- (d) Z4L V4L
- (e) None of these

13. Which of the following words could be coded as “T15E O9U”?

- (a) Death Magnetic
- (b) Sword Fish
- (c) Dark Knight
- (d) Sword Night
- (e) Last Knight



DID YOU KNOW?

Sometimes the logic goes around the first or last letter of the word so try to initiate accordingly.

Directions (14-15): Study the information and answer the following questions: In a certain code language “Words Meaning Enhanced” is coded as “6&14 4@4 1&5”. “Vowels Support Education” is coded as “3#12 1#18 9%15” “Sometime Mentioned Tongue” is coded as “14\$13 9\$5 15&21”. “Device Made Function” is coded as “8&15 1&3 8#4”.

14. What is the code for ‘supported’?



- (a) 15#5
- (b) 15&5
- (c) 14\$5
- (d) 14&5
- (e) None of these

15. What is the code for 'Baking Powder'?

- (a) 5#14 2#5
- (b) 2#13 5#5
- (c) 5#13 2%5
- (d) 5&13 2#5
- (e) None of these

Directions (16-20): These questions are based on the following informations. In a certain code: 'severe cash crunch again' is coded as 'M*Z S@X V#H S#X'. 'Finance Ministry has emphasis' is coded as 'B\$N H&S H\$V V@U'. 'Reserve Bank India has claimed' is coded as 'Z*R V@I H&S W@X P@Y'.

16. What will be the code for 'Emphasis'?

- (a) V@U
- (b) H&S
- (c) B\$N
- (d) H\$V
- (e) None of these

17. What will be the code for 'Bankers'?

- (a) Y@H
- (b) Y&B
- (c) H@Y
- (d) B\$Y
- (e) M35 C12

18. Which of the following will be the code for 'Renews'?



- (a) H#I
- (b) H&I
- (c) I#H
- (d) I\$O
- (e) None of these

19. Which of the following can be coded as 'L*A'?

- (a) Jaxes
- (b) Zumbo
- (c) Judge
- (d) April
- (e) None of these

20. What could be the code for 'Court has judges'?

- (a) G*X H\$S Q#H
- (b) G*X H\$S H#Q
- (c) G@X H\$S H#Q
- (d) G*X H\$S H@Q
- (e) G*X H&S H#Q



DID YOU KNOW?

It is not necessary that all the words present in the word may follow same logic as it may varies according to the number of letters present in word as if it is odd one then there may be a different logic for it as it is for the even one.

Direction (21-25): Study the following information and answer the given questions:

In alphabetical series each consonant is assigned a different number from 1-7 (for ex- B is coded as 1, C- 2.....J-7) and again those numbers get repeated (for ex- K-1, L-2.....so on).

Besides the above information, following operations are to be applied for coding the words given in the questions below.

Each letters of the given questions will be coded as per the given conditions:

I. Vowels appearing before 'M' in the Alphabetical series will be coded as '***'.



II. Vowels appearing after 'M' in the alphabetical series will be coded as '\$\$'.

III. Number immediately preceded by vowel will be coded as '#1'.

IV. Number immediately followed by vowel will be coded as '@#'.

21. What will possibly be the code for 'NORMAL'?

- (a) '#1\$\$@##2**@#
- (b) '#1\$\$@##1**@#
- (c) '#3\$\$@##1**@#
- (d) '#1\$#@##1**@#
- (e) None of these

22. What will possibly be the code for 'EMBARKS'?

- (a) **@##1**@#12
- (b) **@##1**@#31
- (c) **@##1**@#41
- (d) **@##1**@#11
- (e) None of these

23. What will possibly be the code for 'SMITTLE'?

- (a) 1#1**@#2#1**
- (b) 1#1**@#2#11*
- (c) 1#1**@#2#1*1
- (d) 2#1**@#2#1**
- (e) None of these

24. What will possibly be the code of 'ANNUAL'?

- (a) **@##1\$\$**@#
- (b) *1@##1\$\$**@#
- (c) **##@1\$\$**@#
- (d) *2@##1\$\$**@#





(e) None of these

25. What is the code for 'PROM'?

(a) 5#1\$\$@#

(b) 2#1\$\$@#

(c) 4#1\$\$@#

(d) 6#1\$\$@#

(e) None of these

Directions (26-30): Study the information and answer the following questions: In a certain code language "Seemed peer attend" is coded as "18BV 20BZ 19CW". "Arrive Assessing file" is coded as "22BZ 19DZ 12RV" "Double systems possible" is coded as "19BY 21LY 25CV".

26. What is the code for 'support'?

(a) 22DL

(b) 21CL

(c) 21BL

(d) 22BL

(e) None of these

27. What is the code for 'asking'?

(a) 19ZH

(b) 20ZH

(c) 21XH

(d) 19HX

(e) 19HZ

28. What is the code for 'Announced'?

(a) 21CZ

(b) 21ZC

(c) 23BZ

(d) 22CZ





(e) None of these

29. What is the code for 'Less'?

(a) 20BZ

(b) 19BV

(c) 21CV

(d) 19BZ

(e) None of these

30. What is the code for 'peer loom'?

(a) 15CO 18BC

(b) 15BO 18BV

(c) 15BO 18CV

(d) 18CO 15BV

(e) None of these

Direction (31-35): Study the following information and answer the given questions: In alphabetical series A-Z each letter except vowels is assigned a different number from 1-6 (for ex- B is coded as 1, C-2.....H-6) and again those numbers get repeated (for ex- J-1, K-2.....so on). Also each vowel is coded with different letters viz. g, w, q, c, and k. In coded language-

"Election Live" is coded as – g3g24kq5 3k5g

"Start new" is coded as – 34c24 5g6

"Under process" is coded as – w53g2 62q2g33

Besides the above example, following operations are to be applied for coding the words given in the questions below.

(i) If first letter is consonant and last letter is vowel then the codes of both of them will be interchanged.

(ii) If both first and last letter are vowel then they are to be coded as \$.

(iii) If first letter of a word is vowel and last letter is consonant then both are to be coded as @.

(iv) If both first and last letter are consonant then they are to be coded as &. (If the word does not satisfy the conditions given above then the letters of that word are to be coded as per the directions given above)

31. What can be the code of 'global'?



- (a) 53q1c&
- (b) 53q1c3
- (c) &q31c&
- (d) &3q1c&
- (e) None of these

32. What can be the code of 'Title'?

- (a) Gk434
- (b) Gk344
- (c) 4k43g
- (d) Kg434
- (e) None of these

33. What can be the code of 'Adviser'?

- (a) C35k3g2
- (b) C35k3g@
- (c) @35k3g@
- (d) C53k3g2
- (e) None of these



34. What can be the code of 'Insurance'?

- (a) K53w2c52c
- (b) \$53w25c2\$
- (c) \$35w2c52\$
- (d) \$53w2c52\$
- (e) None of these

35. What can be the code of 'Marine'?

- (a) Gc2sk4
- (b) Gc2k54



- (c) 4c2k54
- (d) 4c2k5g
- (e) None of these

Directions (36-38): Answer these questions based on the following information. In a certain code:

“review time slot” is coded as - “e%5 o#11 a@27”

“moment question answer” is coded as - “g#29 c&18 q#19”

“tension paper mailing” is coded as - “f%10 b#3 f%15”

“ design layout home” is coded as - “j#6 h%11 c#14”

36. What is the code for “purchase railway”?

- (a) k%20 g%1
- (b) b#13 h@35
- (c) b@13 u%12
- (d) k%20 g%2
- (e) none of these

37. What is the code for “crosscheck”?

- (a) g#21
- (b) h#21
- (c) p%16
- (d) b@14
- (e) None of these

38. Which among the following may be coded as “q#9”?

- (a) Assets
- (b) Recover
- (c) Sector
- (d) Connect s
- (e) None of these





Directions (39-40): Triangle represents \blacktriangle (1) and circle represents \bullet (0). If triangle appears in unit's place, then its value is 1. If it appears in 10's place its value is doubled to 2 like that it continues. Questions based on this

For example:

$$\begin{aligned}\blacktriangle &= 1 \\ \blacktriangle \bullet \blacktriangle &= 4, 0, 1 = 4 + 0 + 1 = 5 \\ \blacktriangle \bullet &= 2\end{aligned}$$

39. How will you represent '11' in this code language?

- (a) $\blacktriangle \blacktriangle \bullet \blacktriangle$
(b) $\bullet \blacktriangle \blacktriangle \bullet$
(c) $\bullet \blacktriangle \blacktriangle \blacktriangle$
(d) $\bullet \blacktriangle \bullet$
(e) $\blacktriangle \bullet \blacktriangle \blacktriangle$

40. What will be the code for $\blacktriangle \bullet \blacktriangle \blacktriangle \blacktriangle$?

- (a) 19
(b) 23
(c) 22
(d) 27
(e) 25

Solutions

Solutions (1-3): In this new pattern coding decoding each letter, except vowel, is assigned a number from 1-5
So, B-1, C-2, D-3, F-4, G-5, H-1, J-2, K-3, L-4, M-5, N-1, P-2, Q-3, R-4, S-5, T-1, V-2, W-3, X-4, Y-5, Z-1.

Each vowel is assigned a different symbol as-%, #, \$, @, &. So, for vowels the symbols are - A-@, E-#, I-\$, O-&, U-%.

1. (c); Nuclear Bomb – Condition (i) applied- 4%24#@1 1&51



2. (b); War – Condition (i) applied-4@3 And- Condition (ii) applied- *1* Peace- No condition applied- 2#@2#

3. (d); Own- Condition (ii) applied- *3* Life- No Condition applied- 4\$4#

Solutions (4-5):

WORDS	CODES
Mount	nu
Has	is
Serious/Challenge	re/ch
Credible	di
Alternative	Lt/fu
Wants	Wu
Inform	Fu/lt
Ended	de

4. (e);

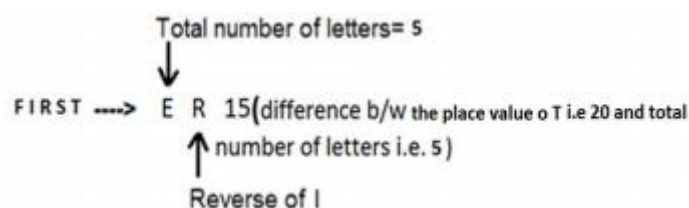
5. (c);

Solutions (6-10): This coding decoding question is based on the latest pattern, following logic are applied in this question to decode the code.

(i) The first letter of the code represents an alphabet which has the same place value as the number of letters in the given word.

(ii) The second letter of the code is the reverse of the second letter of the word (A-Z, B-Y.....)

(iii) The number at the end of the code is the difference between the place value of the last letter of the word and the total number of letters in the word.



6. (a);

7. (c);

8. (b);

9. (d);

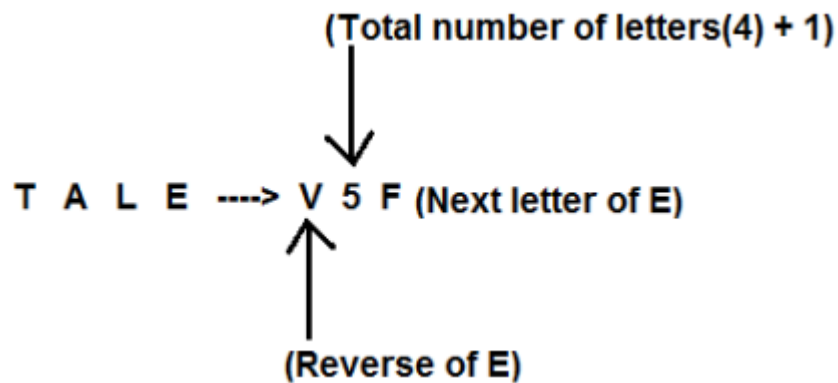
10. (e);



Solutions (11-13): This is question of Coding-Decoding based on new pattern. In these questions, following logic is applied to decode the code:- If the total number of letters in the word is even,

1st letter of the code:- Reverse(A-Z, B-Y....) of the greatest(according to the alphabetical series) vowel in the word. 2nd letter of the code:- Total number of letters in the word + 1

3rd letter of the code:- Next letter(according to the alphabetical series) of the last letter of the word.

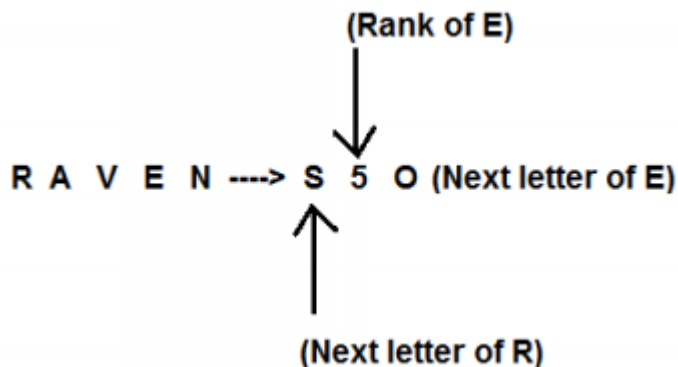


If the total number of letters in the word is odd,

1st letter of the code:- Next letter(according to the alphabetical series) of the first letter of the word.

2nd letter of the code:- Rank/Place value of the greatest vowel in the word.

3rd letter of the code:- Next letter(according to the alphabetical series) of the last letter of the word.



11. (d);

12. (c);

13. (d);

Solutions (14-15): Let us understand the logic behind the given coding decoding:

For the I digit of the code – I Number in the code will be the difference of the of place value of the first letter and last letter present in the word.

For the symbol



For different number of vowels present in the word, the code will be accordingly assigned to it.

No. of vowels in the word	Code
1	@
2	#
3	&
4	\$
5	%

For the last digit of the code – The place value of the second last letter present in the word.

14. (b);

15. (a);

Solutions (16-20): The given words are coded as per following pattern:

(i) First letter of the code represents the opposite letter of the last letter of the given word.

For example: Again- 'N'=M

(ii) Last letter of the code represents the opposite letter of the first letter of the given word.

For example: Again- 'A'=Z (iii) The symbol of the code is depending on the total number of letters in the given word.

No. of letters - Symbol

3 - &

4 - @

5 - *

6 - #

7 - ©

8 - \$

For ex. Again – The code is 'M*Z'.



16. (d);

17. (c);

18. (a);

19. (b);

20. (e);

Solutions (21-25):

Logic: The different number codes for all the consonant as per the given condition are,

B-1, C-2, D-3, F-4, G-5, H-6, J-7

K-1, L-2, M-3, N-4, P-5, Q-6, R-7

S-1, T-2, V-3, W-4, X-5, Y-6, Z-7

Step 1: The consonants of the word 'NORMAL' are to be coded as the number allotted to the consonant:

N	O	R	M	A	L
4	O	7	3	A	2

Step 2: The numbers immediately preceded and followed by the vowels are to be coded as per the given conditions;

So, the code for consonant for word 'NORMAL' is coded as '4O73A2', numbers 4 and 7 is immediately followed and preceded respectively by 'O' so, '4' is coded as '#1' and '7' is coded as '@#'. Similarly, '3' and '2' is immediately followed and preceded respectively by 'A' so, '3' is coded as '#1' and '2' is coded as '@#'.

	N	O	R	M	A	L
Step 1:	4	O	7	3	A	2
Step 2:	#1	O	@#	#1	A	@#

Step 3: Now the vowels are to be coded as per the given conditions, as 'O' comes after 'M' in the alphabetical series so 'O' is coded as '\$\$' and 'A' comes before 'M' in the alphabetical series so, 'A' is to be coded as '**'.

	N	O	R	M	A	L
Step 1:	4	O	7	3	A	2
Step 2:	#1	O	@#	#1	A	@#
Step 3:	#1	\$\$	@#	#1	**	@#



So, the final code for the word 'NORMAL' is '#1\$\$@##1**@#'.

21.(b); Therefore, the code for the word 'NORMAL' is '#1\$\$@##1**@#'.

22.(d) Step 1: The consonants of the word 'EMBARKS' are to be coded as the number allotted to the consonant:

E	M	B	A	R	K	S
E	3	1	A	7	1	1

Step 2: The numbers immediately preceded and followed by the vowels are to be coded as per the given conditions; So, the code for consonant for word 'EMBARKS' is coded as 'E31A711', number '3' is followed by vowel so the code for '3' is '@#' and numbers '1' and '7' is immediately preceded and followed respectively by 'A' so, '1' is coded as '#1' and '7' is coded as '@#'. But the numeric code of 'K' and 'S' is '1' is neither followed by nor preceded by any vowel. Hence, there code will remain the same.

	E	M		B	A	R	K	S
Step 1:	E	3		1	A	7	1	1
Step 2:	E	@#		#1	A	@#	1	1

TM

Step 3: Now the vowels are to be coded as per the given conditions, as 'E' comes before 'M' in the alphabetical series so 'E' is coded as '**' and 'A' comes before 'M' in the alphabetical series so, 'A' is to be coded as '**'.

	E	M		B	A	R	K	S
Step 1:	E	3		1	A	7	1	1
Step 2:	E	@#		#1	A	@#	1	1
Step 3:	**	@#		#1	**	@#	1	1

So, the final code for the word 'EMBARKS' is '**@##1**@#11'.

23.(a); The code for "SMITTLE" is '1#1**@#2#1**'.

	S	M	I	T	T	L	E
Step 1:	1	3	1	2	2	2	E
Step 2:	1	#1	**	@#	2	#1	**

24.(a); The code for 'ANNUAL' is '**@##1\$\$**@#'.

	A	N	N	U	A	L
Step 1:	A	4	4	U	A	2
Step 2:	**	@#	#1	\$\$	**	@#



25.(a);

	P	R	O	M
Step 1:	5	7	O	3
Step 2:	5	#1	\$\$	@#

Solutions (26-30): Let us understand the logic behind the given coding decoding:

For the digit of the code – Number in the code will be the place value of the highest place value of letter present in the word.

For the first letter of the code-

Case-1

If the given word has some common letter then the code will be according to the given order:

No. of common letter in the word	Code
2	B
3	C
4	D

For ex: Arrive -In this word two common letters 'r' and in Assessing has four common letters 's'. So the first letter of code for Arrive is 'B' and for Assessing is 'D'. Case II If the given word has no common letter then first letter of the code will be coded as opposite letter of the second letter of the word.

For the last letter of the code – The opposite letter of the smallest place value letter present in the word according to the English alphabet.

26. (c);

27. (e);

28. (a);

29. (b);

30. (b);

Direction (31-35): In this new pattern coding decoding each letter, except vowel, is assigned a number from 1-6 So, B-1, C-2, D-3, F-4, G-5, H-6, J-1, K-2, L-3, M-4, N-5, P-6, Q-1, R-2, S-3, T-4, V-5, W-6, X-1, Y-2, Z-3. Also each vowel is assigned different letters. So, for vowels the letters are - A-c, E-g, I-k, O-q, U-w.

31.(d); global- Condition (iv) applied- &3q1c&

32.(a); Title- Condition (i) applied- gk434



39.(e); As given in the Directions If triangle appears in unit's place then its value is 1. If it appears in 10's place its value is doubled to 2 like that it continues. Then to represent the 11 by $\triangle \bullet \triangle \triangle$ $2^3 0^2 2^1 2^0 = 8+0+2+1 = 11$

40.(b); As given in the Directions If triangle appears in unit's place then its value is 1. If it appears in 10's place its value is doubled to 2 like that it continues

$\triangle \bullet \triangle \triangle \triangle = 2^4 0^3 2^2 2^1 2^0$

$= 16+0+4+2+1 = 23$

