

1. The age of Rakhi is twelve times that of her daughter Anubha. If age of Anubha is 3 years now, then what was the age of Rakhi, 2 years earlier?
 (A) 20 years (B) 34 years
 (C) 30 years (D) 36 years

1. B
 Sol. Rakhi : Anubha
 12 : 1
 $\downarrow \times 3$: $\downarrow \times 3$
 36 : 3

So the age of Rakhi, 2 years earlier = 34 year

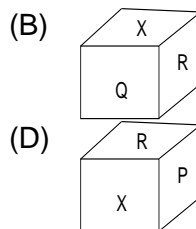
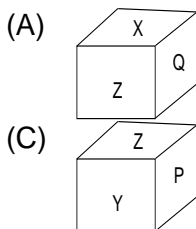
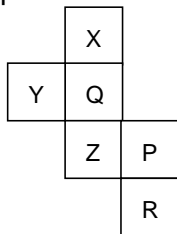
2. In a certain code language, "SATURN" is written as "JVQXWW" and "URANUS" is written as "OYJENY". How is "JUITER" written in that code language?
 (A) NIPMQN (B) NIPMYF
 (C) NQMPIN (D) FYLMPI

2. A
 Sol. $\begin{matrix} +4 & -4 & +4 & -4 & +4 & -4 \\ S & A & T & U & R & N \\ \swarrow & \swarrow & \swarrow & \swarrow & \swarrow & \swarrow \\ J & V & Q & X & W & W \end{matrix}$ Similarly, $\begin{matrix} +4 & -4 & +4 & -4 & +4 & -4 \\ J & U & I & T & E & R \\ \swarrow & \swarrow & \swarrow & \swarrow & \swarrow & \swarrow \\ N & I & P & M & Q & N \end{matrix}$

3. At what time between 4 & 5 will the hands of a watch point in opposite directions?
 (A) 54 min past 4 (B) $49\frac{1}{11}$ min past 4
 (C) $54\frac{6}{11}$ min past 4 (D) 50 min past 4

3. C
 Sol. At 4 o'clock, the hands of the watch are 20 min. spaces apart.
 To be in opposite directions, they must be 30min. spaces apart.
 Minute hand will have to gain 5 min. spaces.
 55min spaces are gained in 60 min.
 5 min. spaces are gained in $(60/55 \times 5)$ min. or $54\frac{6}{11}$ min.
 Required time = $54\frac{6}{11}$ min. past 4.

4. From the given options, which answer figure can be formed by folding the figure given in the question?



4. D
 Sol. Opposite faces are
 X - Z
 Y - P

Q - R
Option (D) can be formed

Directions (Q.5 to Q.6): Find out the odd word/letters pair from the given alternatives.

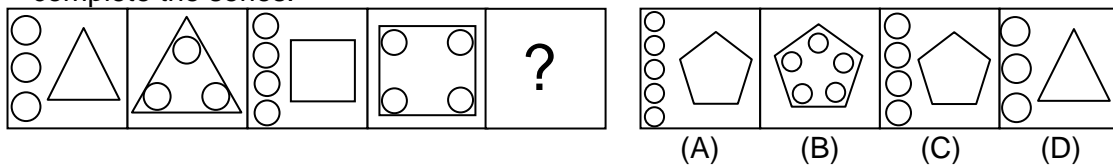
5. (A) Kuchipudi (B) Kathak
(C) Bhangra (D) Pongal

5. D
Sol. Pongal is a festival, and rest are different forms of dance.

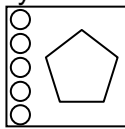
6. (A) PE (B) MV
(C) GP (D) DM

6. A
Sol. PE has – 11 series, but rest three have +9 series.

7. A figure series is given out of which the last figure is missing. Find which one would complete the series.



7. A
Sol. By observation option (A) is a correct choice.



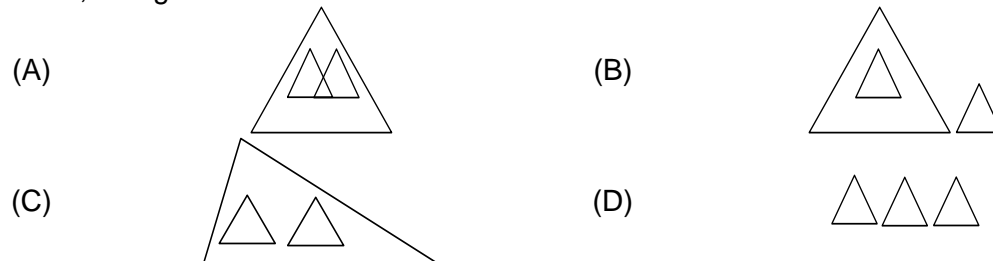
8. From the given alternative words, select the word which cannot be formed using the letters of the given word:

I N T E L L I G E N C E

- (A) CANCEL (B) NEGLECT
(C) GENTLE (D) INCITE

8. A
Sol. CANCEL word is not derived from INTELLIGENCE

9. Identify the diagram that best represents the relationship among classes given below:
Rose, Marigold and Flowers



9. C
Sol.

10. Select the missing number from the given alternatives

28	20	7
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84	35	12
45	?	9

- (A) 19
(C) 26

- (B) 22
(D) 25

10. D

Sol. Pattern is $\frac{28}{7} \times 5 = 20$, $\frac{84}{12} \times 5 = 35$, $\frac{45}{9} \times 5 = 25$

Directions (Q.11 to Q.15): Study the following information carefully to answer the given questions.

A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input: 7 create 28 factory 14 race 86 violence editorial 56

Step I: editorial 7 create 28 factory 14 race violence 56 86

Step II: violence editorial 7 create 28 factory 14 race 86 56

Step III: factory violence editorial 7 create 14 race 86 56 28

Step IV: create factory violence editorial 7 race 86 56 28 14

Step V: race create factory violence editorial 86 56 28 14 7

Now, the following questions are based on the below given input.

Input: probe 98 marriage over 12 poverty 44 9 defending 25 honors

11. Which of the following will be the penultimate step?

- (A) Step VI
(C) Step IV

- (B) Step V
(D) Step III

11. B

Sol. Students let us understand the Logic behind this Question and let's understand how to solve it. As a first step, let's first understand the logic behind the Output. If you will see the final output, you will observe the following:

(i)- The machine rearranges a word and a number in each step.

(ii)- The words are arranged according to the length of words in descending order from left. That means the word having more number of letters are arrange first at the left end and the words having less number of letter arrange in last at the left end.

(iii)- Numbers are arranged in descending order on the right end in each step.

Input: probe 98 marriage over 12 poverty 44 9 defending 25 honors

Step I: defending probe marriage over 12 poverty 44 9 25 honors 98

Step II: marriage defending probe over 12 poverty 9 25 honors 98 44

Step III: poverty marriage defending probe over 12 9 honors 98 44 25

Step IV: honors poverty marriage defending probe over 9 98 44 25 12

Step V: probe honors poverty marriage defending over 98 44 25 12 9

Step VI: over probe honors poverty marriage defending 98 44 25 12 9

Penultimate step means second last step which is 5th step.

12. What will be the position of 'poverty' in the last step?

- (A) Seventh from the left
(C) Sixth from the left

- (B) Sixth from the right
(D) Fourth from the left

12. D

Sol. Students let us understand the Logic behind this Question and let's understand how to solve it. As a first step, let's first understand the logic behind the Output. If you will see the final output, you will observe the following:

(i)- The machine rearranges a word and a number in each step.

(ii)- The words are arranged according to the length of words in descending order from left. That means the word having more number of letters are arrange first at the left end and the words having less number of letter arrange in last at the left end.

(iii)- Numbers are arranged in descending order on the right end in each step.

Input: probe 98 marriage over 12 poverty 44 9 defending 25 honors
 Step I: defending probe marriage over 12 poverty 44 9 25 honors 98
 Step II: marriage defending probe over 12 poverty 9 25 honors 98 44
 Step III: poverty marriage defending probe over 12 9 honors 98 44 25
 Step IV: honors poverty marriage defending probe over 9 98 44 25 12
 Step V: probe honors poverty marriage defending over 98 44 25 12 9
 Step VI: over probe honors **poverty** marriage defending 98 44 25 12 9

13. Which word/number would be the fourth from the right end in Step IV?
 (A) defending (B) honors
 (C) 98 (D) 25

13. C

Sol. Students let us understand the Logic behind this Question and let's understand how to solve it. As a first step, let's first understand the logic behind the Output. If you will see the final output, you will observe the following:

- (i)- The machine rearranges a word and a number in each step.
 (ii)- The words are arranged according to the length of words in descending order from left. That means the word having more number of letters are arrange first at the left end and the words having less number of letter arrange in last at the left end.
 (iii)- Numbers are arranged in descending order on the right end in each step.

Input: probe 98 marriage over 12 poverty 44 9 defending 25 honors
 Step I: defending probe marriage over 12 poverty 44 9 25 honors 98
 Step II: marriage defending probe over 12 poverty 9 25 honors 98 44
 Step III: poverty marriage defending probe over 12 9 honors 98 44 25
 Step IV: honors poverty marriage defending probe over 9 **98** 44 25 12
 Step V: probe honors poverty marriage defending over 98 44 25 12 9
 Step VI: over probe honors poverty marriage defending 98 44 25 12 9

14. After how many steps, no further arrangement of words is possible?
 (A) Five (B) Four
 (C) Six (D) Seven

14. C

Sol. Students let us understand the Logic behind this Question and let's understand how to solve it. As a first step, let's first understand the logic behind the Output. If you will see the final output, you will observe the following:

- (i)- The machine rearranges a word and a number in each step.
 (ii)- The words are arranged according to the length of words in descending order from left. That means the word having more number of letters are arrange first at the left end and the words having less number of letter arrange in last at the left end.
 (iii)- Numbers are arranged in descending order on the right end in each step.

Input: probe 98 marriage over 12 poverty 44 9 defending 25 honors
 Step I: defending probe marriage over 12 poverty 44 9 25 honors 98
 Step II: marriage defending probe over 12 poverty 9 25 honors 98 44
 Step III: poverty marriage defending probe over 12 9 honors 98 44 25
 Step IV: honors poverty marriage defending probe over 9 98 44 25 12
 Step V: probe honors poverty marriage defending over 98 44 25 12 9
 Step VI: over probe honors poverty marriage defending 98 44 25 12 9
 Step VI is the last step.

15. Which step would give the following output: 'poverty marriage defending probe over 12 9 honors 98 44 25'?
 (A) Step IV (B) Step III
 (C) Step II (D) There will be no such step

15. B

Sol. Students let us understand the Logic behind this Question and let's understand how to solve it. As a first step, let's first understand the logic behind the Output. If you will see the final output, you will observe the following:

- (i)- The machine rearranges a word and a number in each step.

(ii)- The words are arranged according to the length of words in descending order from left. That means the word having more number of letters are arrange first at the left end and the words having less number of letter arrange in last at the left end.

(iii)- Numbers are arranged in descending order on the right end in each step.

Input: probe 98 marriage over 12 poverty 44 9 defending 25 honors

Step I: defending probe marriage over 12 poverty 44 9 25 honors 98

Step II: marriage defending probe over 12 poverty 9 25 honors 98 44

Step III: poverty marriage defending probe over 12 9 honors 98 44 25

Step IV: honors poverty marriage defending probe over 9 98 44 25 12

Step V: probe honors poverty marriage defending over 98 44 25 12 9

Step VI: over probe honors poverty marriage defending 98 44 25 12 9

Directions (Q.16 to Q.17): In each question below is given a statement followed by two conclusions numbered I and II. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.

16. **Statement:**

A neurotic is a non-stupid person who behaves stupidly.

Conclusion:

I. Stupidity and neuroticism are related.

II. Normal persons behave intelligently.

(A) If only conclusion I follows

(B) If only conclusion II follows

(C) If neither I nor II follows and

(D) If both I and II follow.

16. A

Sol. It is mentioned in the statement that a neurotic is a person who behaves stupidly. So, I follows. The behavior of a normal person cannot be deduced from the given statement. So, II does not follows.

17. **Statement:**

Vegetable prices are soaring in the market.

Conclusion:

I. Vegetables are becoming a rare commodity.

II. People cannot eat vegetables.

(A) If only conclusion I follows

(B) If only conclusion II follows

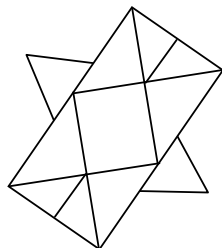
(C) If neither I nor II follows and

(D) If both I and II follow.

17. C

Sol. The availability of vegetables is not mentioned in the given statement. So, I does not follow. Also, II is not directly related to the statement and so it also does not follows.

18. Find the number of triangles in the figure?



(A) 12

(B) 10

(C) 18

(D) 16

18. C

Sol. By Observation there is 18 triangles.

Directions (Q.19 to Q.20): Select the related number from the given alternatives.

19. $64 : 8 :: 0.01 : ?$

(A) 0.1

(B) 1

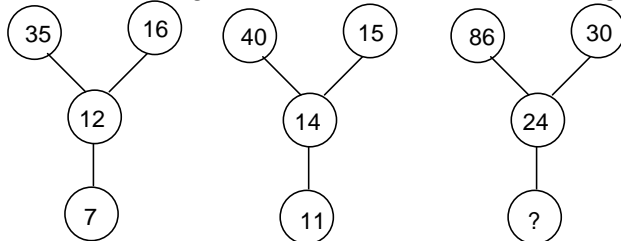
(C) 10 (D) 0.08

19. A
Sol. $8^2 = 64$
 $(0.1)^2 = 0.01$

20. $256 : 290 :: 961 : ?$
(A) 1011 (B) 1017
(C) 1025 (D) 1023

20. C
Sol. $16^2 = 256$ | $31^2 = 961$
 $(16 + 1)^2 = 290$ | $(31 + 1)^2 + 1 = 1025$

21. Find the missing number or character from the given alternatives?



(A) 32 (B) 45
(C) 25 (D) 16

21. A
Sol. We have: $35 - (16 + 12) = 7$; $40 - (15 + 14) = 11$.
So, missing number = $86 - (30 + 24) = 32$.

22. In this letter series, some of the letters are missing which are given in that order as one of the alternatives below it. Choose the correct alternative.

_ q r _ r p _ p q p _ r _ r p
(A) pqrqq (B) qrrr
(C) ppqqp (D) rqqrr

22. A
Sol. The series is pqr/qrp/rpq/pqr/qrp. Thus, the letters change places in a cyclic order.

23. In the following question, select the missing number from the given series.

5	8	32
9	6	48
7	9	?

(A) 45 (B) 48
(C) 54 (D) 64

23. C
Sol. Row (1): $(5 - 1) \times 8 = 32$
Row (2): $(9 - 1) \times 6 = 48$
Row (3): $(7 - 1) \times 9 = 54$

24. Yana and Gupta leave points x and y towards y and x respectively simultaneously and travel in the same route. After meeting each other on the way, Yana takes 4 hours to reach her destination, while Gupta takes 9 hours to reach his destination. If the speed of Yana is 48 km/hr, what is the speed of Gupta?

(A) 72 kmph (B) 32 mph
(C) 32 kmph (D) None of these

24. C
Sol. Yana and Gupta travel for the same amount of time till the time they meet between x and y. So, the distance covered by them will be the same as the ratio of their speeds. Let the time that they have taken to meet each other be x hours from the time they have started.

Therefore, to cover the entire distance, Yana would take $x + 4$ hours and Gupta will take $x + 9$ hours.

Ratio of time taken Yana : Gupta :: $x + 4$:: $x + 9$

=> Ratio of speeds of Yana : Gupta :: $x + 9$:: $x + 4$ or $1 : \frac{x + 4}{x + 9}$

By the time Yana and Gupta meet, Yana would have traveled $48x$ kms. After meeting, this is the distance that Gupta takes 9 hours to cover.

Hence, Gupta's speed = $\frac{48x}{9}$ km/hr.

But we know that the ratio of Yana's and Gupta's speeds are $1 : \frac{x + 4}{x + 9}$

Therefore, $48 : \frac{48x}{9} :: 1 : \frac{x + 4}{x + 9}$

Or $\frac{x}{9} = \frac{x + 4}{x + 9}$

=> $x^2 + 9x = 9x + 36$

=> $x^2 = 36$ or $x = 6$ hours.

Hence, speed of Gupta = $\frac{48x}{9} = \frac{48 \times 6}{9} = 32$ kmph

Directions (Q.25 to Q.28): In these questions, relationship between different elements is shown in the statements. These statements are followed by two conclusions. Mark answer as:

25. **Statements:** $A \geq B$, $C > D$, $C \geq B$, $K = A < E$

Conclusion: I. $C > A$ II. $E > B$

(A) If only conclusion I follows.

(B) If only conclusion II follows.

(C) If either conclusion I or II follows.

(D) If neither conclusion I nor II follows.

25. B

Sol. I. $C > A$ (False), II. $E > B$ (True)

26. **Statements:** $A = D$, $B < L$, $C \geq A$, $D \leq B$

Conclusion: I. $D \leq C$ II. $L > D$

(A) If only conclusion I follows.

(B) If only conclusion II follows.

(C) If neither conclusion I nor II follows.

(D) If both conclusion I and II follow.

26. D

Sol. I. $D \leq C$ (True), II. $L > D$ (True)

27. **Statements:** $G \geq Q$, $S < K$, $Q \geq S$, $K < M > I$

Conclusion: I. $Q > I$ II. $M \geq S$

(A) If only conclusion I follows.

(B) If only conclusion II follows.

(C) If either conclusion I or II follows.

(D) If neither conclusion I nor II follows.

27. D

Sol. I. $Q > I$ (False), II. $M \geq S$ (False)

28. **Statements:** $J > N$, $M > Q$, $N = P$, $R \geq P$, $M = R$

Conclusion: I. $J \geq Q$ II. $Q > J$

(A) If only conclusion I follows.

(B) If only conclusion II follows.

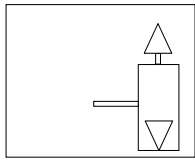
(C) If either conclusion I or II follows.

(D) If neither conclusion I nor II follows.

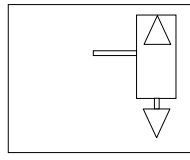
28. C

Sol. I. $J \geq Q$ (False), II. $Q > J$ (False) (But either I or II follows)

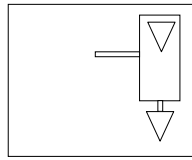
29. Choose the correct water – image of the figure (X) from amongst four alternatives (A), (B), (C) and (D), given along with it.



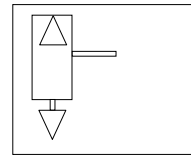
(X)



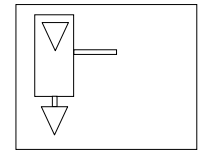
(A)



(B)



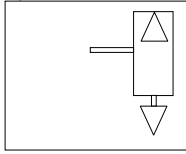
(C)



(D)

29. A

Sol. By observation option (A) is a correct choice.



Directions (Q.30 to Q.33): Study the following information to answer the given question.

For a certain code,

“First we fail” is written as “fo la bu”,

“Then we learn” is written as “jo la si”,

“First learn for success” is written as “ya si bu go” and

“Work for great success” is written as “na ya go ke”.

30. What does ‘ke’ stand for?

(A) work

(B) great

(C) For

(D) Either (A) or (B)

30. D

Sol.

Word	Code
first	bu
we	la
fail	fo
Then	jo
Learn	si
For / success	Ya / go
work / Great	Na / Ke

31. What is the code for ‘ya’?

(A) work

(B) For

(C) Success

(D) Either (B) or (C)

31. D

Sol.

Word	Code
first	bu
we	la
fail	fo
Then	jo
Learn	si
For / success	Ya / go
work / Great	Na / Ke

32. Which of the following may represents ‘We work for success’?

(A) ya la ke si

(B) jo si go la

(C) la go ke ya

(D) bu ya ke go

32. C

Sol.

Word	Code
first	bu
we	la

fail	fo
Then	jo
Learn	si
For / success	Ya / go
work / Great	Na / Ke

33. What does 'jo' stand for?

- (A) then
(C) For

- (B) great
(D) Either (a) or (b)

33. A

Sol.

Word	Code
first	bu
we	la
fail	fo
Then	jo
Learn	si
For / success	Ya / go
work / Great	Na / Ke

34. If 1 is subtracted from all the even digits and 1 is added to all the odd digits in the number 3875264 then arrange in ascending order, which of the following digit is third from the right end?

- (A) 6
(C) 3

- (B) 4
(D) 7

34. A

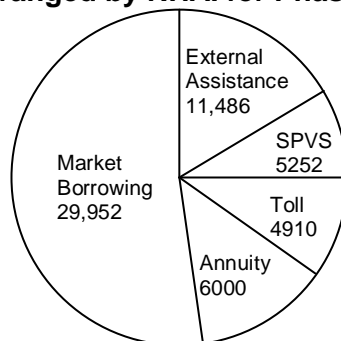
Sol. After changes new arrangement is 4786153

After arrange in ascending order: 1345678

Third from the right end is 6.

Directions (Q.35 to Q.39): The following pie-chart shows the sources of funds to be collected by the National Highways Authority of India (NHAI) for its Phase II projects. Study the pie-chart and answers the question that follow.

Sources of funds to be arranged by NHAI for Phase II projects (in crores Rs.)



35. Near about 20% of the funds are to be arranged through:

- (A) SPVS
(C) Annuity
- (B) External Assistance
(D) Market Borrowing

35. B

Sol. 20% of the total funds to be arranged = Rs. (20% of 57600) crores
= Rs. 11520 crores
 \approx Rs. 11486 crores.

Rs.11486 crores is the amount of funds to be arranged through External Assistance.

36. If NHAI could receive a total of Rs. 9695 crores as External Assistance, by what percent (approximately) should it increase the Market Borrowing to arrange for the shortage of funds?

- (A) 4.5% (B) 7.5%
(C) 6% (D) 8%

36. C

Sol. Shortage of funds arranged through External Assistance} = Rs. (11486 - 9695) crores
= Rs. 1791 crores.

∴ Increase required in Market Borrowing = Rs. 1791 crores.

$$\text{Percentage increase required} = \left\{ \frac{1791}{29952} \times 100 \right\} \% = 5.98\% \approx 6\%.$$

37. If the toll is to be collected through an outsourced agency by allowing a maximum 10% commission, how much amount should be permitted to be collected by the outsourced agency, so that the project is supported with Rs. 4910 crores?

- (A) Rs. 6213 crores (B) Rs. 5827 crores
(C) Rs. 5401 crores (D) Rs. 5316 crores

37. C

Sol. Amount permitted = (Funds required from Toll for projects of Phase II) +
(10% of these funds)
= Rs. 4910 crores + Rs. (10% of 4910) crores
= Rs. (4910 + 491) crores
= Rs. 5401 crores.

38. The central angle corresponding to Market Borrowing is

- (A) 52° (B) 137.8°
(C) 187.2° (D) 192.4°

38. C

Sol. Central angle corresponding to Market Borrowing = $\left(\frac{29952}{57600} \times 360^\circ \right) = 187.2^\circ$

39. The approximate ratio of the funds to be arranged through Toll and that through Market Borrowing is

- (A) 2 : 9 (B) 1 : 6
(C) 3 : 11 (D) 2 : 5

39. B

Sol. Required ratio = $\frac{4910}{29952} = \frac{1}{6.1} \approx \frac{1}{6}$

Directions (Q.40 to Q.44): Study the following information carefully to answer the given questions

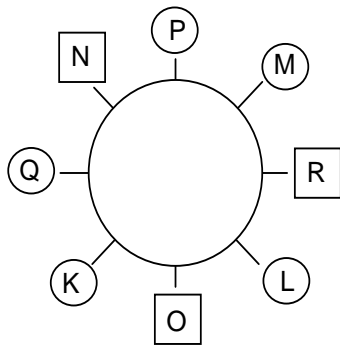
In Delhi, there is a family having eight members K, L, M, N, O, P, Q and R. One day they have decided to go KFC, so they have to seat around a circular table facing the centre. There are 3 males and 5 females in the family. No 2 males are immediate neighbours of each other. O sits second to the right of his wife. M sits third to the right of O. P sits second to the right of her husband R. R is not immediate neighbour of O's wife. N is a male and Q is not immediate neighbour of P. L sits second to the right of K.

40. Who among the following has a male sitting to her/his immediate left and right?

- (A) K (B) L
(C) Q (D) R

40. B

Sol.



L is sitting between two males

□ → Male

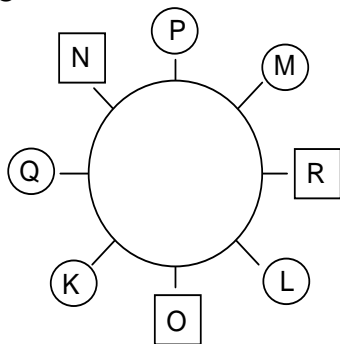
○ → Female

41. Who among the following is O's Wife?

- (A) K
- (C) Q

- (B) L
- (D) M

41. Sol. C



O sits second to the right of his wife means Q is a wife of O

□ → Male

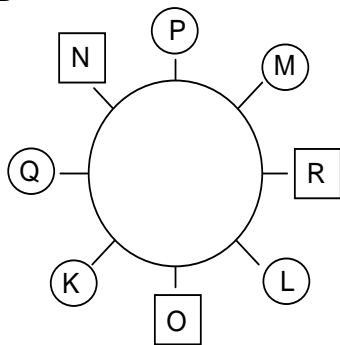
○ → Female

42. What is the position of R with respect to Q?

- (A) Immediate right
- (C) Second to the right

- (B) Third to the left
- (D) Fourth to the left

42. Sol. D



R is fourth to the left of Q

□ → Male

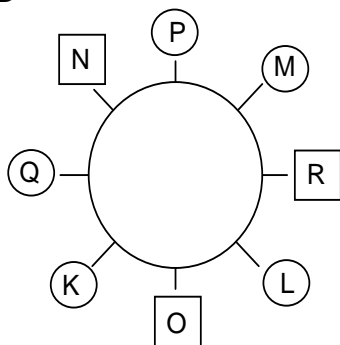
○ → Female

43. Who among the following does not belong to that group?

- (A) M
- (C) K

- (B) L
- (D) R

43. Sol. D



Except R all are females

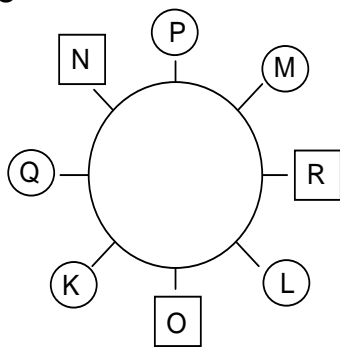
□ → Male

○ → Female

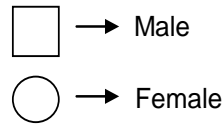
44. Who sits between P and Q?

44. Sol. (A) K
(C) N
C

- (B) R
(D) L



N sits between P and Q

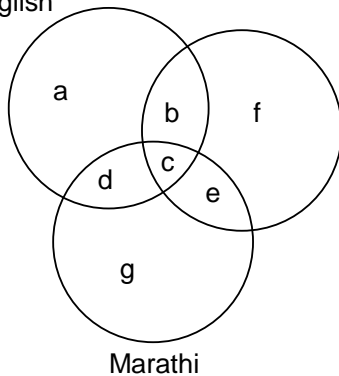


Directions (Q.45 to Q.47): Study the following information carefully to answer the questions.

The teachers' colony has 2800 members, out of which 650 members read only English newspaper. 550 members read only Hindi newspaper and 450 members read only Marathi newspaper. The number of members reading all the 3 newspapers is 100. Members reading Hindi as well as English newspaper are 200. 400 members read Hindi as well as Marathi newspaper and 300 members read English as well as Marathi newspaper.

45. Find the difference between number of members reading English as well as Marathi newspaper and the number of members reading English as well as Hindi newspaper.
(A) 300 (B) 200
(C) 100 (D) 50

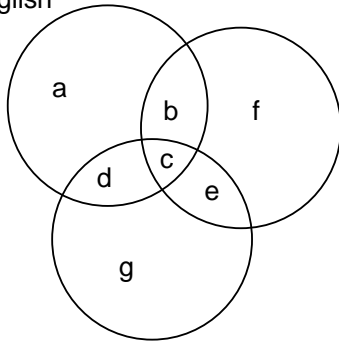
45. Sol. C
English



According to the question,
 $a = 650$; $f = 550$;
 $g = 450$; $c = 100$;
 $b + c = 200$; $c + e = 400$ $c + d = 300$
 $\therefore b = 100$, $e = 300$ and $d = 200$
 Required difference
 $= 300 - 200 = 100$.

46. How many members read at least 2 newspapers?
(A) 1000 (B) 800
(C) 900 (D) 700
46. D

Sol. English



Marathi

According to the question,

$$a = 650; f = 550;$$

$$g = 450; c = 100;$$

$$b + c = 200; c + e = 400 \quad c + d = 300$$

$$\therefore b = 100, e = 300 \text{ and } d = 200$$

Number of member who read at least two newspapers

$$= 100 + 300 + 200 + 100 = 700$$

47. Find the number of members reading Hindi newspaper.

(A) 750

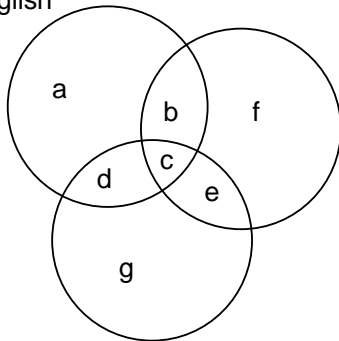
(B) 980

(C) 1050

(D) 1020

47. C

Sol. English



Marathi

According to the question,

$$a = 650; f = 550;$$

$$g = 450; c = 100;$$

$$b + c = 200; c + e = 400 \quad c + d = 300$$

$$\therefore b = 100, e = 300 \text{ and } d = 200$$

Number of members reading Hindi newspaper

$$= b + c + e + f$$

$$= 100 + 100 + 300 + 550 = 1050.$$

48. Which day of the week was 25th December 1995?

(A) Sunday

(B) Monday

(C) Tuesday

(D) Wednesday

48. B

Sol. The total number of odd days up to 25th December, 1995 is obtained as follows

For 1600 years – zero odd days

For 300 years – 1 odd day

In 94 years there are 23 leap years and 71 non leap years.

The total number of odd days in these 94 years is $(23 \times 2 + 71 \times 1) = (46 + 71) = 117$.

\Rightarrow 5 odd days

The number of odd days from 1st Jan to 25th Dec 1995

Month : J + F + M + A + M + J + J + A + S + O + N + D

Odd days: $3 + 0 + 3 + 2 + 3 + 2 + 3 + 3 + 2 + 3 + 2 + 4 = 2$ odd days

The total number of odd days = $1 + 5 + 2 = 1$ i.e, Monday.
Hence 25th December 1995 is Monday.

49. In the following question, select the missing number from the given series.

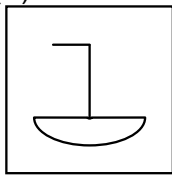
?	113	161
2	7	6
3	4	5

- (A) 31 (B) 36
(C) 280 (D) 161

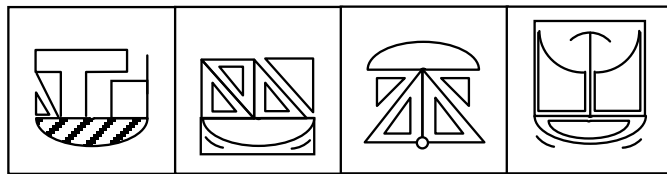
49. A

Sol. $7^2 + 4^3 = 113$
 $6^2 + 5^3 = 161$
 $2^2 + 3^3 = 31$

50. Figure (X) is embedded in any one of the four options. Find the figure that contains figure (X).



(X)



(A) (B) (C) (D)

50. B

Sol. By observation.

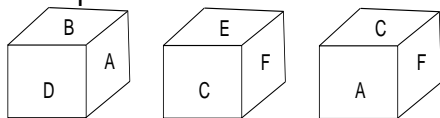
51. If $23 \times 16 = 184$, $37 \times 10 = 370$, then $85 \times 12 = ?$

- (A) 511 (B) 610
(C) 510 (D) 410

51. C

Sol. $23 \times \left(\frac{16}{2}\right) = 184$, $37 \times \left(\frac{10}{2}\right) = 185$, $85 \times \left(\frac{12}{2}\right) = 510$

52. Three positions of a cube are shown below. What will come opposite to face containing 'E'?



- (A) B (B) D
(C) A (D) F

52. C

Sol. A $\xrightarrow{\text{Opposite}}$ E
B $\xrightarrow{\text{Opposite}}$ F
C $\xrightarrow{\text{Opposite}}$ D

53. In the following question, select the number which can be placed at the sign of question mark (?) from the given alternatives.

2	5	7	10	8	11
---	---	---	----	---	----

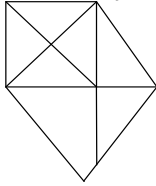
14	9	19	14	20	?
----	---	----	----	----	---

- (A) 14 (B) 15
(C) 17 (D) 19

53. B

Sol. $2 + 12 = 14, 5 + 4 = 9$
 $7 + 12 = 19, 10 + 4 = 14$, Similarly $8 + 12 = 20, 11 + 4 = 15$

54. How many triangles are there in the given figure?



- (A) 11 (B) 12
(C) 13 (D) 15

54. C

Sol. By Observation Total triangles = 13

55. How much does the clock gain or lose per day if its hands coincide every 69 minutes?

- (A) Gain in $80\frac{80}{341}$ minutes (B) Gain in $92\frac{244}{253}$ minutes
(C) Loses in $80\frac{80}{253}$ minutes (D) Loses in $73\frac{251}{253}$ minutes

55. D

Sol. As we know that in a correct clock, the hands of a clock coincide every $65\frac{5}{11}$ minutes. But in case of incorrect clocks, if the hands of a clock coincide is greater than $65\frac{5}{11}$ minutes, then the clock loses time.

So, Loss in 69 minutes

$$= \left(69 - 65\frac{5}{11} \right) = \left\{ 69 - \left(65 + \frac{5}{11} \right) \right\}$$

$$= \left(4 - \frac{5}{11} \right) = \frac{39}{11} \text{ minutes}$$

So, Loss in day i.e., 24 hours

$$= 24 \times 60 \times \frac{39}{11} \times \frac{1}{69}$$

$$= \frac{18720}{253} = 73\frac{251}{253} \text{ minutes}$$

Therefore, the clock loses in a day i.e. in 24 hours = $73\frac{251}{253}$ minutes.

56. In the following question, select the number which can be placed at the sign of question mark (?) from the given alternatives.

3	10	6	186
9	5	3	138
5	7	1	36
3	2	5	?

- (A) 35 (B) 42
(C) 45 (D) 95

56. A

Sol. $(3 \times 10 \times 6) + 6 = 186, (9 \times 5 \times 3) + 3 = 138$

$$(5 \times 7 \times 1) + 1 = 36, (3 \times 2 \times 5) + 5 = 35$$

Directions (Q.57 to Q.60): Following questions are based on the information provided below:

'M × N' means 'M is mother of N'.

'M – N' means 'M is brother of N'.

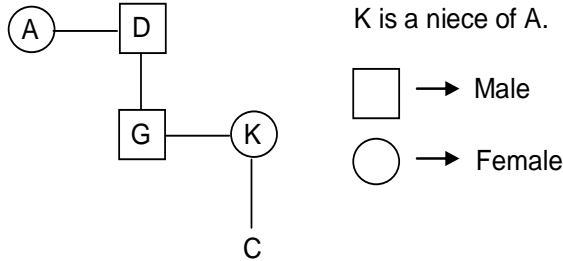
'M + N' means 'M is sister of N'.

'M ÷ N' means 'M is father of N'.

57. Which of the following means 'K is niece of A'?
- (A) $D - G \div K \times C + A$ (B) $K + N \times D + A \div C$
 (C) $A + D \div G - K \times C$ (D) None of these

57. C

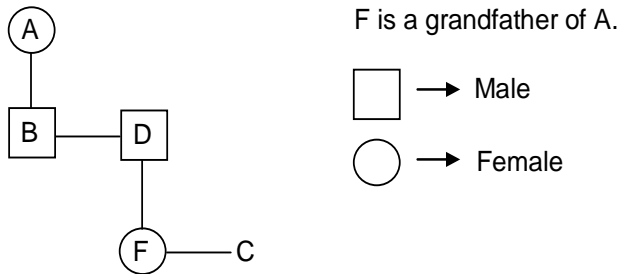
Sol.



58. If the expression $A \times B - D \div F + C$, then which of the following is true?
- (A) F is son of A (B) D is daughter of A
 (C) F is granddaughter of A (D) B is mother of C

58. C

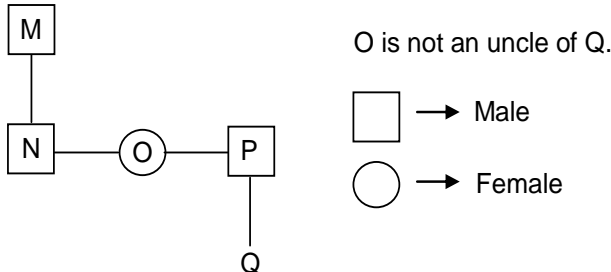
Sol.



59. If the expression $M \div N - O + P \div Q$, then which of the following is not true?
- (A) M is father of N (B) O is uncle of Q
 (C) P is son of M (D) O is daughter of M

59. B

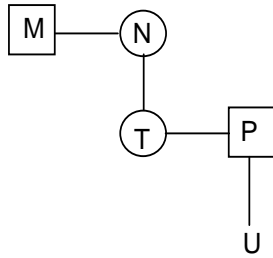
Sol.



60. Which of the following statement shows 'P is nephew of M'?
- (A) $M - N \times T + P \div U$ (B) $M - N \times T + P \times U$
 (C) $P \times N + U \div T - M$ (D) $T \div M \times U + P - N$

60. A

Sol.



P is a nephew of M.

□ → Male

○ → Female

61. If "-" denotes "divided by", "+" denotes "subtracted from", "x" denotes "added to" and "÷" denotes "multiplied by", then $4 \div 16 \times 5 + 4 - 2 = ?$

- (A) 2 (B) 43
(C) 22 (D) 67

61. D

Sol. $4 \div 16 \times 5 + 4 - 2$
 $\Rightarrow 4 \times 16 + 5 - 4 \div 2$
 $\Rightarrow 4 \times 16 + 5 - 2$
 $\Rightarrow 64 + 5 - 2$
 $\Rightarrow 67$

62. In a class, there are 57 students. Sahil's rank is 23rd from top and Kavya is 9th rank below from Sahil's rank and her rank is at exactly between Sahil's rank and Himani's rank. Then what is the Himani's rank from bottom?

- (A) 16 (B) 18
(C) 17 (D) 19

62. C

Sol. Sahil's rank from top is 23rd and kavya is 9th rank below sahil, that means kavya's rank is 32 from top. According to the question kavya is exactly between himani and sahil, so himani's rank is 41 from top. Now Himani's rank from bottom = $57 - (41 - 1) = 17$ th

Directions (Q.63 to Q.66): Select correct alternative from given choices.

63. A3B, C8E, _____, G18K, I23N, K28Q

- (A) D12I (B) B6C
(C) E15H (D) E13H

63. D

Sol. $A - 1 (+) B - 2 \Rightarrow A3B$
 $C - 3 (+) E - 5 \Rightarrow C8E$
 $G - 7 (+) K - 11 \Rightarrow G18K$

64. 12, 14, 18, 26, 38, 62, 74, ?

- (A) 98 (B) 90
(C) 102 (D) 86

64. C

Sol. The product of digits in each number is added to the number to get next number in the series.

65. 1, 8, 9, 64, 25, 216, 49, ?

- (A) 64 (B) 729
(C) 512 (D) 81

65. C

Sol. $1^2, 2^3, 3^2, 4^3, 5^2, 6^3, 7^2, 8^3$
Hence option 'C' is answer.

66. -4, 8, -24, 96, -480, ? ,

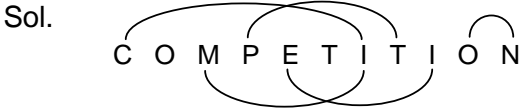
- (A) 2570 (B) 3524
(C) 2880 (D) -928

66. C

Sol. Go on multiplying the given numbers in the series by -2, -3, -4, -5, -6.
 i.e., $-4 \times -2 = 8$
 $8 \times -3 = -24$
 $-24 \times -4 = 96$
 $96 \times -5 = -480$
 So the next number is, $-480 \times -6 = 2880$.
 Hence the required answer is 2880

67. How many such pairs of letters are there in the word COMPETITION each of which has as many letters between them as in the English alphabet?
 (A) Four (B) Six
 (C) Three (D) Five

67. D



Directions (Q.68 to Q.69): Read the following character sequence carefully and then answer the question given below it.

2 A @ # Q W 3 \$ 5 % S & 7 8 C D E * % M L 4 U Z + β 9 R

68. How many such symbols are there in the above sequence, each of which is immediately preceded by a vowel and immediately followed by a symbol?
 (A) One (B) Two
 (C) Three (D) None

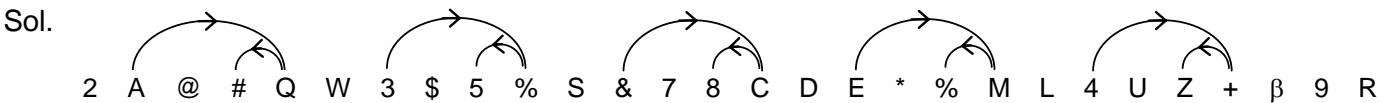
68. B

Sol. A@#, E*%

69. What will come in place of the question mark of the series?

A Q #, 3 % 5, & C 8, E M %, ?
 (A) L Z U (B) 4 + Z
 (C) \$ U Z (D) Z 9 β

69. B



70. There are 23 students in a class. Sumit ranks fourth among the boys in the class. Shivani ranks fifth among the girls in the class. Sumit is one rank below Shivani in the class. No two students hold the same rank in the class. What is Shivani's rank in the class?
 (A) Cannot be determined (B) 5th
 (C) 8th (D) 7th

70. C

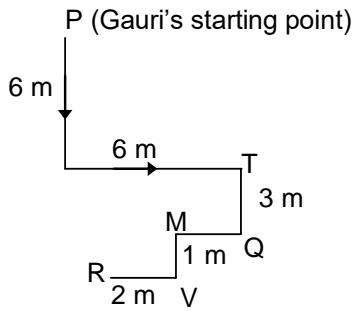
Sol. Shivani is 5th in girls so 4 girls rank above Shivani. Sumit rank is 4th in boys so 3 boys rank above sumit and also he is one rank below Shivani. So, 7 persons rank above Shivani. Therefore Shivani 's rank is 8th from the top.

71. Gauri starts walking from point P, walks in South to Point U which is 6m away. Then She turns left and walks towards point T which is 6m away, after that turns right and goes 3m to point Q, then turns right and walks 1m to point M, then turns left and goes to point V, which is 1m away and once again turns right and goes to point R, which is 2m away. Find what is the shortest distance between point T and R?

(A) 4m (B) 5m
 (C) 7m (D) None of these

71. B

Sol.



Shortest distance $\sqrt{3^2 + 4^2} = 5\text{m}$

Directions (Q.72 to Q.75): In each question below are given some statements followed by some conclusions. You have to assume everything in the statements to be true even if they seem to be at variance with commonly known facts and then find out which of the five given conclusions does not logically follow from the statements, disregarding commonly known facts.

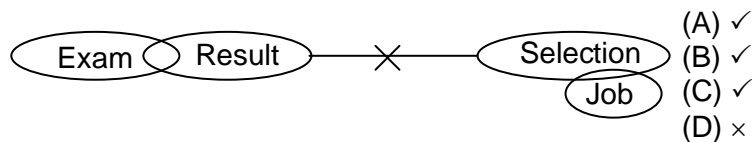
72. **Statements:**
 Some exam are result.
 No result is selection.
 Some selection are job.

Conclusions:

- (A) Some exam are not selection. (B) No selection is a result.
 (C) Some job are not result. (D) Some exam are job.

72. D

Sol.



- (A) ✓
 (B) ✓
 (C) ✓
 (D) ×

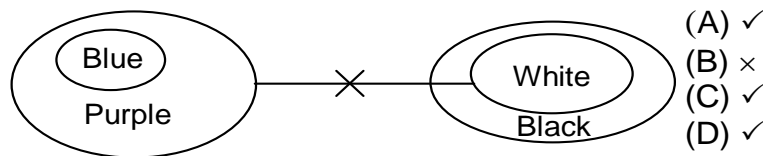
73. **Statements:**
 All Blue are Purple.
 Some Purple are not White.
 All White are Black.

Conclusions:

- (A) All Blue being Black is a possibility. (B) Some Blue are white.
 (C) Some Black are White. (D) Some Purple are Blue.

73. B

Sol.



- (A) ✓
 (B) ×
 (C) ✓
 (D) ✓

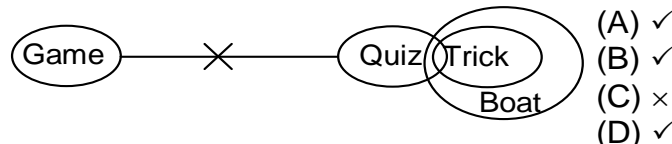
74. **Statements:**
 No Game is a Quiz.
 Some Quiz are Trick.
 All Trick are Boat.

Conclusions:

- (A) Some Quiz are Boat. (B) Some Trick are not Game.
 (C) Some Boat are Game. (D) Some Boat are Trick.

74. C

Sol.



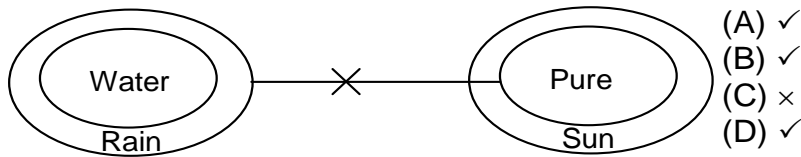
- (A) ✓
 (B) ✓
 (C) ×
 (D) ✓

75. **Statements:**
 All water are Rain.
 No Rain is Pure.
 All Pure are Sun.

Conclusions:

- (A) No water are Pure. (B) Some Rain are water.
 (C) Some Pure are not Sun. (D) Some Sun are Pure.

75.
 Sol.



Directions (Q.76 to Q.80): Each of the questions below consists of a question and two statements numbered I, and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the two statements and Give answer:

- (A) If the data in Statement I is sufficient to answer the question while the data in Statement II is not required to answer the question
 (B) If the data in Statement II is sufficient to answer the question, while the data in Statement I is not required to answer the question
 (C) If the data neither in Statement I nor in Statement II together are sufficient to answer the question
 (D) If the data in all the Statement I and II together are necessary to answer the question

76. Who is the highest paid member among A, B, C, D, E and F?

Statements:

- I. B earned more than C and F but less than A. F earned more than only two persons.
 II. Neither A nor E is the highest paid member. C

76. D

Sol. By combining both the statements together we find D is the highest paid member.

77. What is the age of E?

Statements:

- I. B is the elder brother of E. Mother of E was born in 1975.
 II. B is 5yr younger brother of C. Age difference between C and his father who was born in 1970 is 24yr.

77. C

Sol. Neither in Statement I nor in Statement II together are sufficient to answer the question.

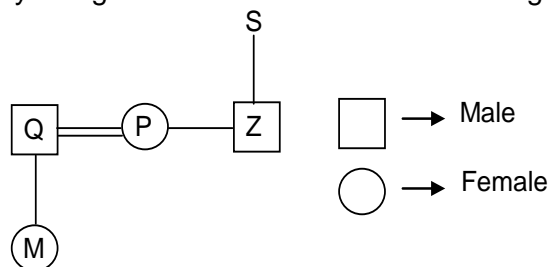
78. How is M related with S?

Statements:

- I. M is the daughter of Q, who is married to P who is the sister of Z and Z is the son of S.
 II. S is the father of Q, who is the mother of Z who is sister of M. P is married to Q.

78. A

Sol. By using first statement we can find M is grand-daughter of S.



79. On which of the following date did Deepika gave her exam?

Statements:

- I. Deepika's father correctly remembers that her exam was after 20th and before 24th of the same month.
- II. Deepika correctly remembers that her exam was after 15th and before 24th on a date of the same month which is a perfect square.

79. B

Sol. By using second statement we can find Deepika's exam on 16th of that month.

80. How is 'check' coded in the given language?

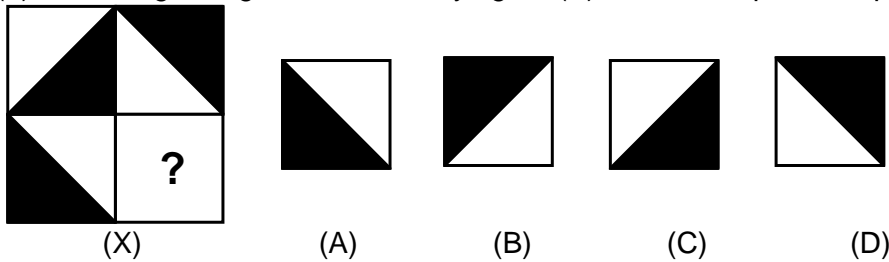
Statements:

- I. 'sell stake check' is coded as 'gm tu hi', 'check stake' is coded as 'tu gm'.
- II. 'detail check' is coded as 'tu ku', 'check bank stake' is coded as 'tu gm am'

80. B

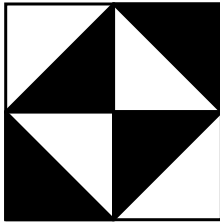
Sol. By the statement II we can find the code of check is 'tu'.

81. Select the figure from the four alternative figures, which when placed in the missing portion (?) of the original figure as shown by figure (X), would complete the pattern.



81. B

Sol.



82. In the following number series only one number is wrong. Find out the wrong number.

9050, 5675, 3478, 2147, 1418, 1077, 950

- (A) 950
- (B) 1418
- (C) 5675
- (D) 1077

82. D

Sol. The pattern of the number series is:

$$9050 - 15^3 = 9050 - 3375 = 5675$$

$$5675 - 13^3 = 5675 - 2197 = 3478$$

$$3478 - 11^3 = 3478 - 1331 = 2147$$

$$2147 - 9^3 = 2147 - 729 = 1418$$

$$1418 - 7^3 = 1418 - 343 = 1075 \neq \boxed{1077}$$

83. Select the correct alternative from the given choices.

bcd, fgh, jkl, ?

- (A) mno
- (B) npq
- (C) mnp
- (D) mpo

83. C

Sol. All vowels dropped.

Directions (Q.84 to Q.88): Read the information carefully and answer the questions:

Eight different coloured boxes i.e. Pink, Red, Violet, Green, Purple, Yellow, White and Magenta are placed one above another in a stack but not necessarily in the same order. Red colour box is immediate above the green colour box. The number of boxes in between Red colour box

and yellow colour box is one more than between the Green colour box and magenta colour box. Not more than three boxes are placed above green colour box. Two boxes are between yellow colour box and green colour box, which is below magenta colour box. White colour box is immediate above the red colour box. Pink colour box is below to yellow colour box. Purple box is not placed below violet and yellow box.

84. How many boxes are between Red and Violet coloured box?
 (A) Two (B) Three
 (C) One (D) Four

84. A

Sol.

MAGENTA
WHITE
RED
GREEN
PURPLE
VIOLET
YELLOW
PINK

85. Which color of box is immediate below to Purple?
 (A) Yellow (B) White
 (C) Red (D) None of these

85. D

Sol.

MAGENTA
WHITE
RED
GREEN
PURPLE
VIOLET
YELLOW
PINK

86. Four of the five following to a group find which is not belongs to the groups?
 (A) White, Yellow (B) Violet, Red
 (C) Pink, Magenta (D) Pink, Green

86. D

Sol.

MAGENTA
WHITE
RED
GREEN
PURPLE
VIOLET
YELLOW
PINK

87. Which box are not adjacent to each other?
 (A) White, Pink (B) Red, White
 (C) Green, Red (D) Magenta, White

87. A

Sol.

MAGENTA
WHITE
RED
GREEN
PURPLE
VIOLET
YELLOW

PINK

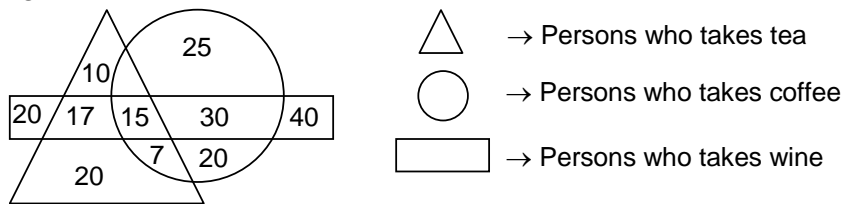
88. Which box is immediate below the Green colour box?
(A) Red (B) Yellow
(C) Purple (D) Magenta

88. C

Sol.

MAGENTA
WHITE
RED
GREEN
PURPLE
VIOLET
YELLOW
PINK

Direction (Q.89 to Q.91): Study the diagram given below and answer each of the following questions.



89. How many persons who take tea and wine but not coffee?
(A) 20 (B) 17
(C) 25 (D) 15

89. B

Sol. 17 persons take tea and wine but not coffee.

90. How many persons take wine?
(A) 100 (B) 82
(C) 92 (D) 122

90. D

Sol. $(20+17+15+30+40) = 122$ persons take wine.

91. How many persons are there who takes only coffee?
(A) 90 (B) 45
(C) 25 (D) 20

91. B

Sol. $25 + 20 = 45$

Directions (Q.92 to Q.96): Study the following information and answer the questions given below:

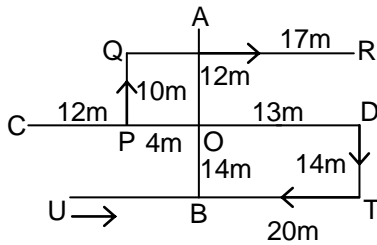
There are AB axis in such a way that A is in north and B is in south direction. There is CD axis in such a way that C is in west direction and D is in east direction. AB axis and CD axis intersect at a point O in such a way that AO is 12m, OB is 14m, OC is 12m, OD is 13 m.

A person starts walking from point P which is 4m to the west of point O and walks 10m in North direction to reach point Q and then he takes a turn to his right and walks 17m and stops at point R. Another person starts walking from point D and walks 14m in south direction to reach point T, then turns to his right and walks 20 m and stops at point U.

92. Point B is in which direction with respect to Point U?
(A) south (B) east
(C) west (D) north

92. B

Sol.



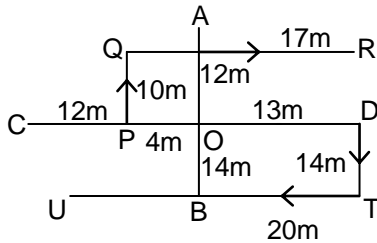
Point B is in east direction of point U.

93. Point T is in which direction with respect to point Q?

- (A) south-east (B) south-west
(C) north-east (D) north-west

93. A

Sol.



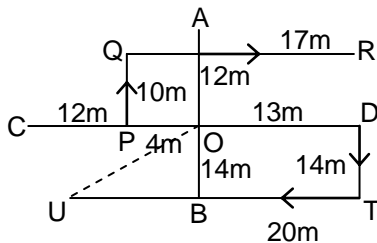
Point T is in south-east direction of point Q.

94. What is shortest distance between point O and point U?

- (A) 31m (B) 33m
(C) 20m (D) None of these

94. D

Sol.



Shortest distance between point O and U is

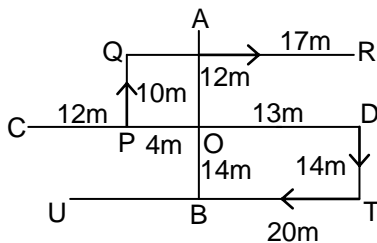
$$\begin{aligned} \sqrt{(UB)^2 + (OB)^2} &= \sqrt{(7)^2 + (14)^2} \\ &= \sqrt{49 + 196} = \sqrt{245} \\ &= 7\sqrt{5} \end{aligned}$$

95. Point R is in which direction with respect to Point T?

- (A) south (B) north
(C) south-west (D) west

95. B

Sol.



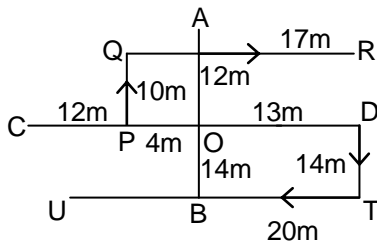
Point R is in north direction of point T.

96. What is distance between point R and point T?

- (A) 31m (B) 33m
(C) 20m (D) 24m

96. D

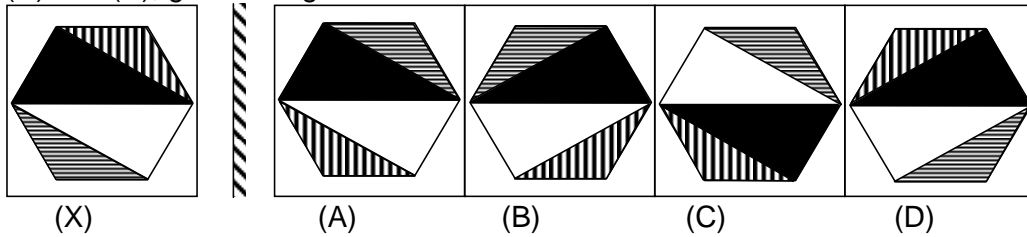
Sol.



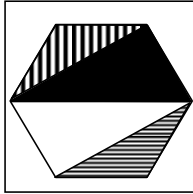
Distance between R and T = RD + DT

$$\begin{aligned} RD &= QP \\ \text{So } 10 + 14 &= 24 \end{aligned}$$

97. Choose the correct mirror – image of the figure (X) from amongst four alternatives (A), (B), (C) and (D), given along with it.



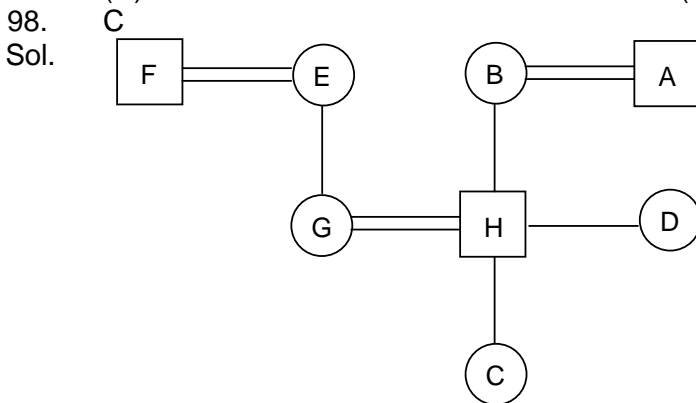
97. D
Sol. By observation option (D) is a correct choice.



Directions (Q.98 to Q.100): Study the information carefully and answer the questions given below.

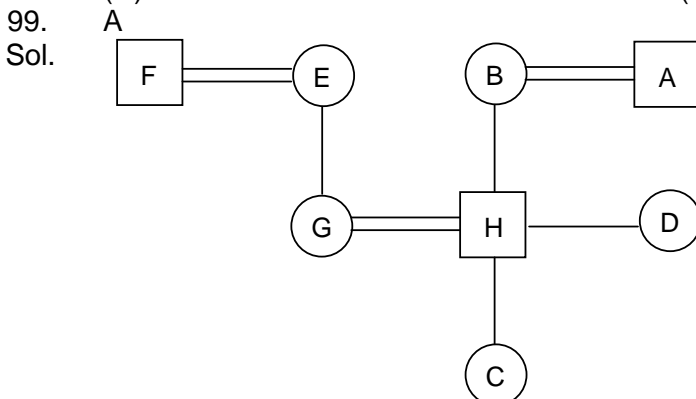
In a family of eight members there are three married couples and five female members, G is daughter-in-law of B, who has two children. D is the aunt of C, who is unmarried. F is father-in-law of H and is married to E. A is the father of D.

98. How is H related to E?
(A) Son (B) Grand father
(C) Son in law (D) Daughter



H is a son in law of E.

99. Who among the following is father of D?
(A) A (B) F
(C) E (D) G



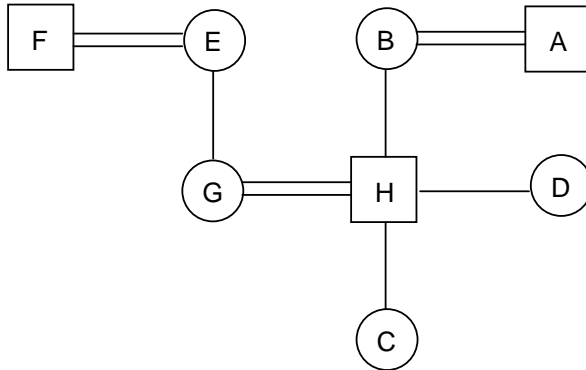
A is a father of D.

100. How is D related to G?

- (A) Daughter-in-law
- (C) Sister

- (B) Sister-in-law
- (D) Daughter

100. Sol.



D is a sister in law of G.