IBPS RRB Officers (Scale I) Prelims Paper 2017

Reasoning Ability

1. **Direction**: Which of the following will come in place of the question mark?

   AC, BE, DH, ?, KQ

   A. GL B. GK

   C. HL D. HM

2. The positions of how many alphabets will remain unchanged if each of the alphabets in the word PROACTIVE is arranged in alphabetical order from left to right?

   A. None B. One

   C. Two D. Three

   E. More than three

Directions (3-7) Study the information given below and answer the questions based on it.

Eight boxes P, Q, R, S, T, U, V and W are kept one above another. Top position is 1 st and bottom position is last. Three boxes are between S and Q. Box V is immediately above box S. 3 boxes are kept between R and P. Box R is above P. There are the same number of boxes between R and W as between W and S. One box is kept between V and U. Box U is below box V.

3. How many boxes are between P and Q?

   A. None B. 1

   C. 2 D. 3

   E. 4

4. Which of the following box is at the top position?

   A. R B. P

   C. T D. V

   E. W

5. Which of the following box at the last but one position?

   A. V B. S

   C. U D. P

   E. W

6. Which of the following box is above box W?

   A. P B. V

   C. S D. T

   E. U

7. How many boxes are below U?

   A. None B. 1

   C. 2 D. 3

   E. 4

Direction (8-12): In the following questions, relationship between different elements are shown in the statements. These statements are followed by two conclusions. Give answer .

8. **Statements**

   A ≥ J = N; H > Y > I < S = N

   Conclusions:

   I. A = N

   II. A > N

   A. Only conclusion I is true

   B. Only conclusion II is true

   C. Either conclusion I or conclusion II is true

   D. Neither conclusion I nor conclusion II is true

   E. Both the conclusion I and conclusion II are true

9. **Statements:**

   T ≤ J > F; U > J ≤ H= S

   Conclusions:

   I. F ≤ U

   II. U > T

   A. Only conclusion I is true

   B. Only conclusion II is true

   C. Either conclusion I or conclusion II is true

   D. Neither conclusion I nor conclusion II is true

   E. Both the conclusion I and conclusion II are true

10. **Statements**:

    Y > U ≤ H = Q; R ≤ U > M

    Conclusions:

    I. R ≤ Q

    II. Q ≥ M

    A. Only conclusion I is true

    B. Only conclusion II is true

    C. Either conclusion I or conclusion II is true

    D. Neither conclusion I nor conclusion II is true

    E. Both the conclusion I and conclusion II are true

11. **Statements:**

    L ≥ F > G ≤ W; H < S = L

    Conclusions:

    I. H > G

    II. W ≤ L

A. Only conclusion I is true

B. Only conclusion II is true

C. Either conclusion I or conclusion II is true

D. Neither conclusion I nor conclusion II is true

E. Both the conclusion I and conclusion II are true

12. **Statements:** T > U ≥ V ≥ W; X < Y = W > Z

Conclusions:

I. Z > U

II. W < T

A. Only conclusion I follow.

B. Only conclusion II follows.

C. Either conclusion I or conclusion II follows.

D. Neither conclusion I nor conclusion II follows.

E. Both conclusions I and II follow.

13. If '2' is subtracted from each even digit and '1' is added to each odd digit in the number 8367284, then how many digits will appear twice in the new number thus formed?

A. One B. Two

C. Three D. More than three

E. None of these

14. How many such digits are there in the number 935126 which remain same in the number as when the digits are rearranged in descending order within the number?

A. None B. one

C. Two D. Three

E. More than three

15. **Direction**: If it is possible to make only one meaningful word from the first, fifth, seventh and eighth letters of the word SPONTANEOUS, then the second letter from the left is your answer. If no such word can be formed then your answer is X and if more than one such word can be formed your answer is Y.

A. **X** B. **T**

C. **E** D. **S**

E. **Y**

Direction (16-20) : Study the information given below and answer the questions based on it.

In a certain language,

'bright and intellectual students' is written as 'mt la ga pa'

'fresh and bright mind' is written as 'la pa ni dh'

'in mind thoughts clear' is written as 'dh pz ma mi'

'intellectual thoughts in mind' is written as 'ma pz dh ga'

16. How is 'mind' written in that code language?

A. pz B. dh

C. mi D. Can't be determined

E. None of these

17. What will be the possible code for 'bright and clear' in the given code language?

A. pa la dh B. mi ga mt

C. la pa mi D. pz ma la

E. None of these

18. In the given code language, what does the code 'ni' stand for?

A. fresh B. mind

C. intellectual D. Can't be determined

E. None of these

19. How is 'thoughts' written in that code language?

A. pz B. ma

C. mi D. either (A) or (B)

E. Only (B) and (C)

20. In the given code language, what does the code 'ga' stand for?

A. intellectual B. mind

C. fresh D. bright

E. None of these

Direction (21-25) : Study the information given below and answer the questions based on it.

Seven persons P, Q, R, S, T, U and V buy cars in different months i.e. June, July, August, September, October, November and December, not necessarily in the same order. U bought a car in a month which was having 30 days but not in September. Three persons bought cars between U and T. Two persons bought cars between T and Q. Three persons bought cars between Q and P. P bought car one of the months before Q. Two persons bought cars between P and V. S bought car one of the months after V.

21. Who among the following bought car in August?
A. P B. R
C. Q D. U
E. V

22. Which of the following does not belongs to the group?
A. T B. R
C. Q D. P
E. S

23. How many persons bought car between P and R?
A. 1 B. 2
C. 3 D. 4
E. 5

24. Which of the following combination is correct?
A. T-June B. P-November
C. S-October D. R-July
E. None is correct

25. How many persons bought car after Q?
A. 1 B. 2
C. 3 D. 4
E. 5

Direction (26-30): In each question below are two or three statements followed by two conclusions numbered I and II. You have to take the two given statements to be true even if they seem to be at variance from commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

26. **Statements**
Some pens are erasers
No eraser is pencil.
All pencils are books.
Conclusions
I. Some books are pens.
II. All pens can never be pencils.
A. Only conclusion I follow.
B. Only conclusion II follows.
C. Either conclusion I or II follows
D. Neither conclusion I nor II follows
E. Both conclusions I and II follows

27. **Statements:**
All ropes are sticks.
No stick is pencil.
Some pencils are knives.
Conclusions:
I. Some knives are ropes.
II. Some knives are sticks.
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.
E. if both Conclusions I and II follow.

28. **Statements:**
All sweet are sour.
No sour is tasty.
All tasty are food.
Conclusions:
I. All sweet being food is a possibility.
II. No sweet is tasty.
A. Only I follows
B. Only II follows
C. Either I or II follows
D. Neither I nor II follows
E. Both I and II follow

29. **Statements**:
Some Army is Force.
All Army are Navy.
All Navy are Police.
Conclusions:
I. Some Police are Army.
II. Some Force can never be Police.
A. Only I follows
B. Only II follows
C. Either I or II follows
D. Neither I nor II follows
E. Both I and II follow

30. **Statements:**
Some poor are rich.
All rich are doctors.
Some intelligent are doctors.
Conclusions:
I. All intelligent being doctors is a possibility.
II. Some poor are doctors.
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
E. if both conclusions I and II follows

Directions (31-35) Study the following information carefully and answer the given questions.

P, Q, R, S, T, U, V and X are sitting around a circular table. Three of them are facing outside and the rest of them are facing inside.

Q sits third to the right of P and faces outside. R sits to the opposite of Q and facing inside. U sits to the immediate left of R and is facing in the same direction as R. V sits third to the right of U. Q and V faces in the same direction. The one sitting between Q and V is facing the direction opposite to them. X sits immediate left of S who is facing inside. The immediate neighbours of Q are facing in the opposite direction of each other.

31. Who sits second to the left of U?

A. P B. S
C. X D. V
E. Cannot be determined

32. What is the position of V with respect to X?

A. Fourth to the left
B. Second to the right
C. Third to the left
D. Third to the right
E. Second to the left

33. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?

A. U B. P
C. R D. V
E. T

34. How many persons are sitting in between U and T if we start from T in clockwise direction?

A. Two
B. Three
C. More than three
D. One
E. None

35. Who is sitting third to the right of X?

A. U B. V
C. R D. T
E. None of these

Directions(36-40): Study the information given below and answer the questions based on it.

Twelve people are sitting in two parallel rows containing six people each, in such a way that there is an equal distance between adjacent persons. In row 1, M, N, O, P, Q and R seated and all of them are facing south. In row 2, A, B, C, D, E and F are seated and all of them are facing north. Each member in row 1 is facing another member of row 2.

Two persons are sitting between M and N. Neither of them is at corner. The one who is facing D is neighbor of N. O is 2 nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than two people sit between C and B. More than 2 people sit between E and the one who is facing M. The immediate neighbor of R is facing B. P is not sitting any extreme end of the line.

36. Who among the following does not belongs to the group?

A. O B. C
C. B D. E
E. R

37. Who is facing P?

A. A B. F
C. B D. D
E. C

38. How many persons sit between O and N?

A. None B. 1
C. 2 D. 3
E. 4

39. Who among the following is 3 rd to the left of Q?

A. P B. R
C. N D. M
E. O

40. Which of the following pair is facing each other?

A. Q-D B. B-P
C. A-M D. C-N
E. D-Q

Quantitative Aptitude

Direction (1-5): What should come in place of question mark (?) in the following number series?

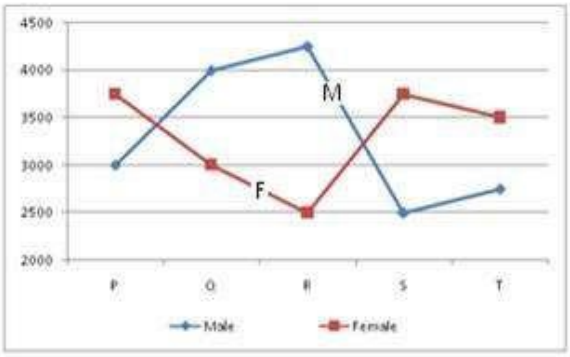
1. 131, 67, 35, 19, 11, ?
   A. 9 B. 7
   C. 6 D. 5
2. 25, 28, 22, 31, 19, ?
   A. 39 B. 29
   C. 34 D. 24
   E. None of these
3. 7, 4.5, 6, 11, ?
   A. 24.5 B. 20.5
   C. 22.25 D. 22.5
   E. 18
4. 1, 4, 9, 18, 35, ?
   A. 65 B. 68
   C. 54 D. 59
   E. None of these
5. 3.5, 4, 8, 27, ?, 767
   A. 258 B. 147
   C. 267 D. 129
   E. None of these

Direction (6-10): In the following question two equations are given. You have to solve both and establish the relation between given variables:

6. I. $2x^2 + 11x + 14 = 0$
   II. $2y^2 + 13y + 21 = 0$
   A. X > Y B. X ≥ Y
   C. X < Y D. X ≤ Y
   E. X = Y or the relationship cannot be established
7. I. $x^2 - 9x + 20 = 0$
   II. $y^2 = 16$
   A. X > Y B. X ≥ Y
   C. X < Y D. X ≤ Y
   E. X = Y or the relationship cannot be established
8. I. $x^2 - 7x + 12 = 0$
   II. $y^2 - 11y + 30 = 0$
   A. X > Y B. X ≥ Y
   C. X < Y D. X ≤ Y
   E. X = Y or the relationship cannot be established
9. I. $x^2 - 8x + 15 = 0$
   II. $y^2 - 12y + 36 = 0$
   A. X > Y B. X ≥ Y
   C. X < Y D. X ≤ Y
   E. X = Y or the relationship cannot be established
10. I. $2x^2 + 9x + 7 = 0$
    II. $y^2 + 4y + 4 = 0$
    A. X > Y B. X ≥ Y
    C. X < Y D. X ≤ Y
    E. X = Y or the relationship cannot be established

Directions (11-15): Study the following graph carefully and answer the questions given below-

The following line graph gives the number of Students Studying in Different Universities in a year



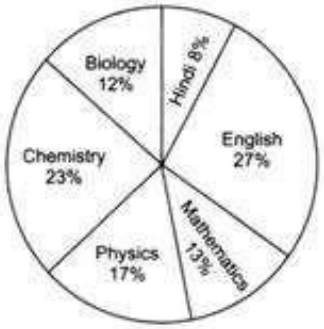
11. What is the average number of females in all the Universities together?
    A. 3300 B. 3400
    C. 3800 D. 3100
    E. None of these
12. What is the Ratio between number of students (males and females together) in University P to R?
    A. 1:2 B. 1:1
    C. 2:1 D. 1:3
    E. None of these
13. What is the respective ratio of the number of females from university P and Q together to the number of males in the University R and T together?
    A. 27 : 32 B. 27 : 28
    C. 25 : 28 D. 28 : 27
    E. None of these

14. The number of males in University Q is approximately what percent of the total number of Female students in all Universities together?
A. 28% B. 30%
C. 18% D. 24%
E. 34%

15. If the total number of males in University T increases by 50%, what would be the total number of students (males and females together) in that University?
A. 7526 B. 7825
C. 7625 D. 7527
E. None of these

Directions (16-20): Study the following Pie-chart carefully to answer these questions.

Percentage-wise Distribution of Teachers who Teach Six Different Subjects Total Number of Teachers = 1800 Percentage of Teachers



16. If two-ninth of the teachers who teach Physics is female, then number of male Physics teachers is **approximately** what percentage of the total number of teachers who teach Chemistry?
A. 57 B. 42
C. 63 D. 69
E. 51

17. What is the total number of teachers teaching Chemistry, English and Biology?
A. 1226 B. 1116
C. 1176 D. 998
E. None of these

18. What is the difference between the total number of teachers who teach English and Physics together and the total number of teachers who teach Mathematics and Biology together?
A. 352 B. 342
C. 643 D. 653
E. None of these

19. What is the **respective** ratio of the number of teachers who teach Mathematics and the number of teachers who teach Hindi?
A. 13 : 7 B. 7 : 13
C. 7 : 26 D. 8 : 15
E. None of the above

20. If the percentage of Mathematics teachers is increased by 50 per cent and percentage of Hindi teachers decreased by 25 per cent then what will be the total number of Mathematics and Hindi teachers together?
A. 390 B. 379
C. 459 D. 480
E. None of these

Directions (21-25) Go through the data given in the table below and solve the questions that follow.
The table consists of details of students who appeared for 2 subjects, 'Physics' and 'Chemistry' and the percentage who passed these
subjects from ABC college from the year, 2011 to 2015.

Year	Physics		Chemistry	
	Total number of students appeared	Percentage of Students Passed	Total number of students appeared	Percentage of Students Passed
2011	650	30	800	50
2012	250	70	630	30
2013	350	50	550	20
2014	600	60	300	80
2015	350	70	200	40

21. What is the average number of students, who appeared for Physics from the year, 2011 to 2015?
A. 440 B. 400
C. 480 D. 380
E. None of these

22. Calculate the ratio, between the total number of students who appeared for Physics from 2013 to 2015 and the total number of students, who appeared for Chemistry from 2011 to 2013?
A. 13: 201 B. 63: 99
C. 64: 99 D. 65: 99
E. None of these

23. What is the average number of students, who did not pass in Physics in the year 2011 and 2015 together?
A. 320 B. 280
C. 300 D. 260
E. 240

24. Calculate the difference between the total number of students, who passed in Chemistry in 2011 and the total number of students who did not pass in Physics in 2015?
A. 485 B. 395
C. 535 D. 295
E. None of these

25. The total number of students, who did not pass Physics in 2013 is approximately what percent of the total number of students, who did not pass Chemistry in 2013?
A. 45% B. 40%
C. 42% D. 56%
E. 58%

Direction (26-30): What approximate value should come in place of the question mark (?) in the following equation (Note: You are not expected to calculate the exact value)?

26. 21.003 × 39.998 – 209.91 = 126 × ?
A. 5 B. 4
C. 3 D. 2
E. 6

27. (47% of 1442 - 36% of 1412) ÷ 63=?
A. 4 B. 5
C. 3 D. 6
E. 1

28. 2418.065 + 88 ÷ 14.2 × 6 = ?
A. 1059 B. 2419
C. 2496 D. 2455
E. 1985

29. 1201 ÷ 14.99 × 19.91 + 400.01 =?
A. 1700 B. 1850
C. 1800 D. 1950
E. 2000

30. 15.2% of 726 × 12.8% of 643 = ?
A. 9110 B. 9088
C. 9100 D. 9096
E. 9082

31. The average of five positive numbers is 128. The average of the first two numbers is 118 and the average of last two numbers is 126. What is the third number?
A. 152 B. 56
C. 86 D. Cannot be determined
E. None of these

32. 4 years ago, the ratio of $\frac{1}{2}$ of Anita's age at that time and four times of Bablu's age at that time was 5 : 12. Eight years hence, $\frac{1}{2}$ of Anita's age at that time will be less than Bablu's age at that time by 2 years. What is Bablu's present age?
A. 10 years B. 24 years
C. 9 years D. 15 years
E. 18 years

33. A man sold an article at a loss of 20%. If he had sold that article for Rs. 24 more then he would have gained 10%. Find the cost price of that article:
A. Rs. 120 B. Rs. 80
C. Rs. 90 D. Rs. 112
E. None of these

34. A started a business with investing Rs. 8000 and after some months, B joined with investing Rs. 5000. At the end of one year, total profit was Rs. 4250 and share of A is Rs. 3000. After how many months did B join?
A. 4 B. 5
C. 2 D. 1
E. Date inadequate

35. Train P crosses a pole in 6 sec. Train Q coming from opposite direction crosses a bogie of train P of length 1/3 of train P in 4 seconds. Length of Train P and Train Q are in the ratio 5 : 4. Find the speed of Train P, if the speed of Train Q is 21 m/s.

A. 60 m/s B. 50 m/s
C. 40 m/s D. 30 m/s
E. 20 m/s

36. One ball is picked up randomly from a bag containing 8 yellow, 7 blue and 6 black balls. What is the probability that it is neither yellow nor black?

A. 3/4 B. 4/7
C. 2/9 D. 1/3
E. None of the above

37. A and B together can do a piece of work in 60 days, A and C can do the same work in 45 days. The ratio of Work efficiency of B and C is 1:2. In how many days they together can do the same work?

A. 30 days B. 25 days
C. 24 days D. 36 days
E. None of these.

38. Swami brought pulses of worth INR 32/kg and INR 45/kg. He mixed them with a third variety in the ratio 1 : 1 : 2. If the mixture is worth INR 88/kg, then the price of the third variety per kg will be:

A. 169.50 B. 137.50
C. 175.50 D. 145.50
E. None of the above

39. The speed of a boat in still water is (27/4) km/hr. The time required to travel a certain distance upstream is five times than that of downstream for the same distance. Find the speed of the stream.

A. 3.5 km/hr. B. 7.6 km/hr.
C. 5.8 km/hr. D. 4.5 km/hr.
E. 2.8 km/hr.

40. The ratio of Curved Surface Area to Total Surface Area of Cylinder is 3:5. If the curved surface area of the cylinder is 1848 metre square, find the height of the cylinder.

A. 25m B. 27m
C. 21m D. 28m
E. None of these

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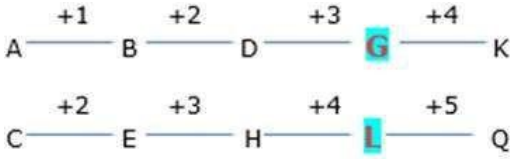
Solutions

Reasoning Ability

1. Ans. A.



Answer is option A

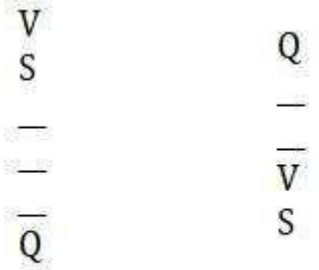
2. Ans. A.

P	R	O	A	C	T	I	V	E
A	C	E	I	O	P	R	T	V

Hence, option A is correct.

3. Ans. B.

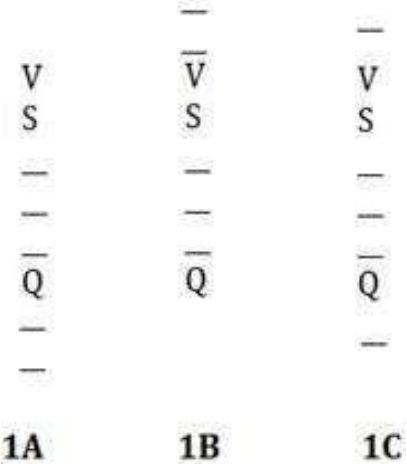
One box is between P and Q.
Three boxes are between Q and S. Box V is immediately above box S.



Case 1 **Case 2**

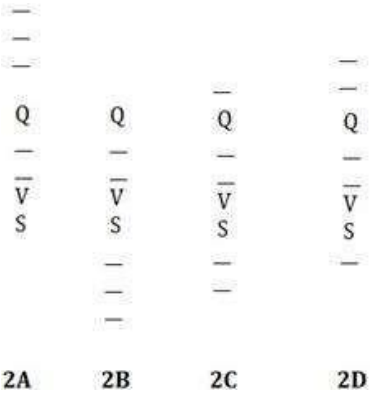
Now we can see that there is no direct information so we have to create diagram for every possibilities.

Case 1 diagram:



1A **1B** **1C**

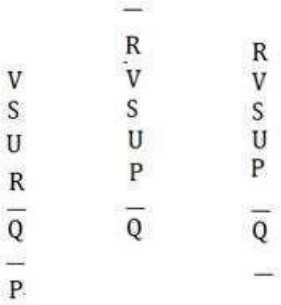
Case 2 diagram:



2A **2B** **2C** **2D**

Take Case 1:

One box is kept between V and U. Box U is below box V. 3 boxes are kept between R and P. Box R is above P.

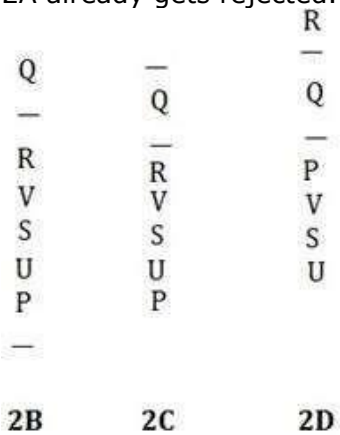


1A **1B** **1C**

There are as many boxes between R and W as W and S. But no diagram is follow this condition so all cases 1 gets rejected.

Take case 2:

One box is kept between V and U. Box U is below box V. 3 boxes are kept between R and P. Box R is above P. As U is below V so case 2A already gets rejected.



2B **2C** **2D**

There are as many boxes between R and W as W and S. Only case 2D satisfy this condition.

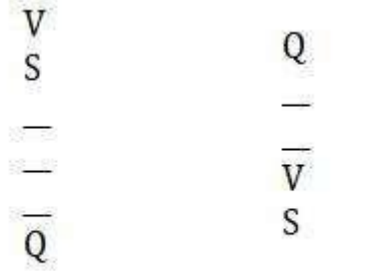
Here is the final arrangement:

R
T
Q
W
P
V
S
U

4. Ans. A.

Box R is at the top position.

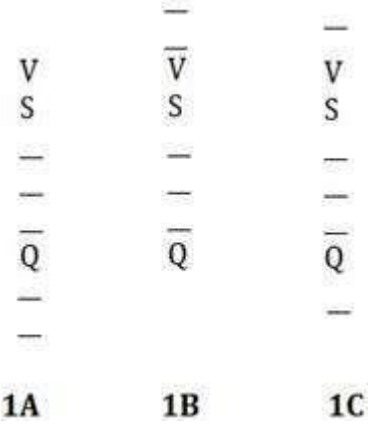
Three boxes are between Q and S. Box V is immediately above box S.



Case 1 **Case 2**

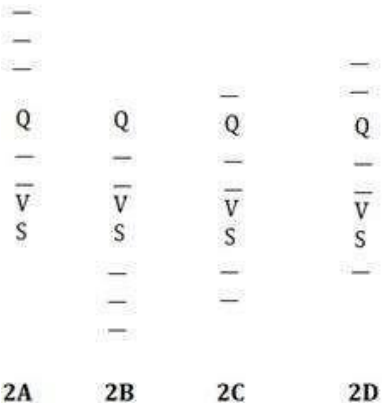
Now we can see that there is no direct information so we have to create diagram for every possibilities.

Case 1 diagram:



1A **1B** **1C**

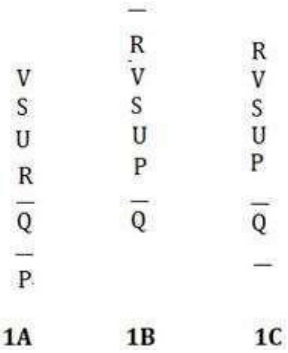
Case 2 diagram:



2A **2B** **2C** **2D**

Take Case 1:

One box is kept between V and U. Box U is below box V. 3 boxes are kept between R and P. Box R is above P.

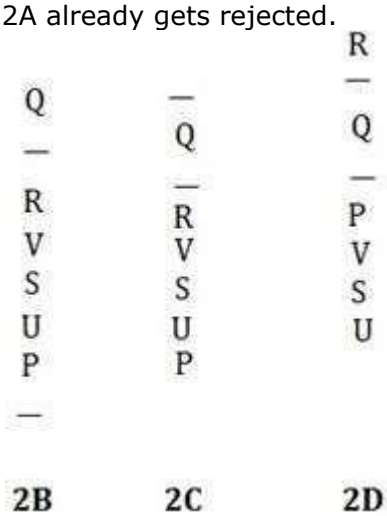


1A **1B** **1C**

There are as many boxes between R and W as W and S. But no diagram is follow this condition so all cases 1 gets rejected.

Take case 2:

One box is kept between V and U. Box U is below box V. 3 boxes are kept between R and P. Box R is above P. As U is below V so case 2A already gets rejected.



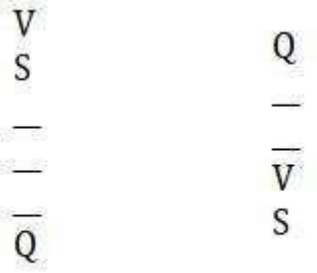
2B **2C** **2D**

There are as many boxes between R and W as W and S. Only case 2D satisfy this condition.

Here is the final arrangement:

R
T
Q
W
P
V
S
U

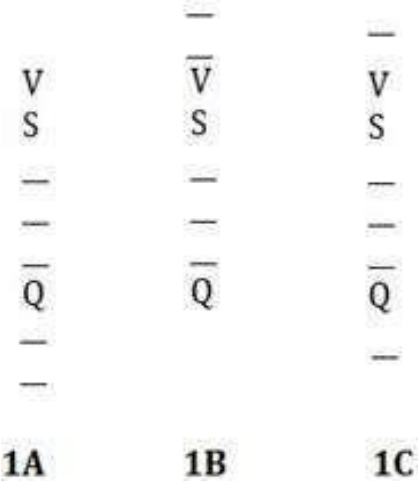
5. Ans. B.
S is at the 2nd last position.
Three boxes are between Q and S. Box V is immediately above box S.



Case 1 **Case 2**

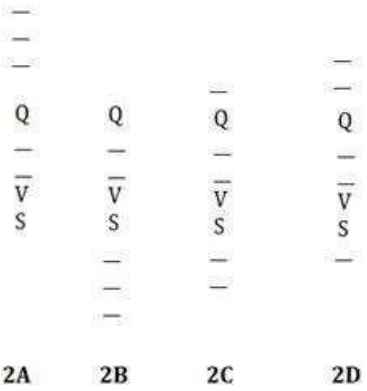
Now we can see that there is no direct information so we have to create diagram for every possibilities.

Case 1 diagram:



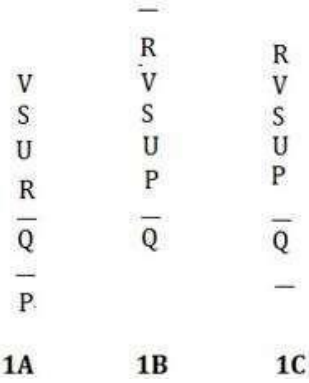
1A **1B** **1C**

Case 2 diagram:



2A **2B** **2C** **2D**

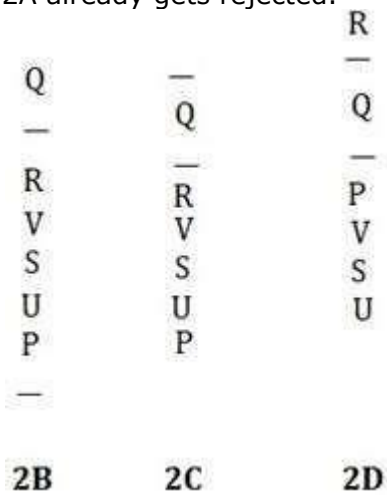
Take Case 1:
One box is kept between V and U. Box U is below box V. 3 boxes are kept between R and P. Box R is above P.



1A **1B** **1C**

There are as many boxes between R and W as W and S. But no diagram is follow this condition so all cases 1 gets rejected.

Take case 2:
One box is kept between V and U. Box U is below box V. 3 boxes are kept between R and P. Box R is above P. As U is below V so case 2A already gets rejected.



2B **2C** **2D**

There are as many boxes between R and W as

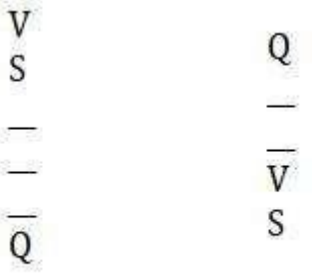
W and S. Only case 2D satisfy this condition.
Here is the final arrangement:

R
T
Q
W
P
V
S
U

Last but one position - 2nd from the bottom. So, that box is S.

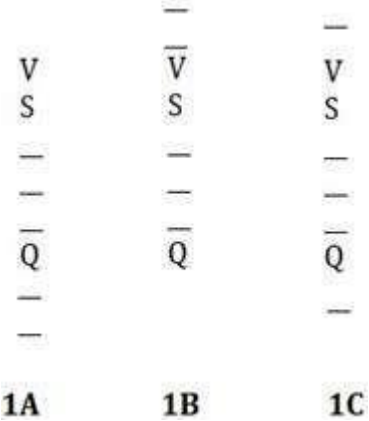
6. Ans. D.

Box T is above box W.
Three boxes are between Q and S. Box V is immediately above box S.



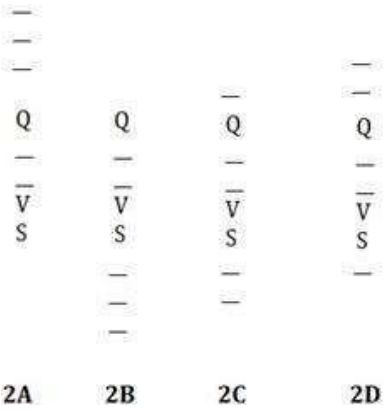
Case 1 **Case 2**

Now we can see that there is no direct information so we have to create diagram for every possibilities.
Case 1 diagram:



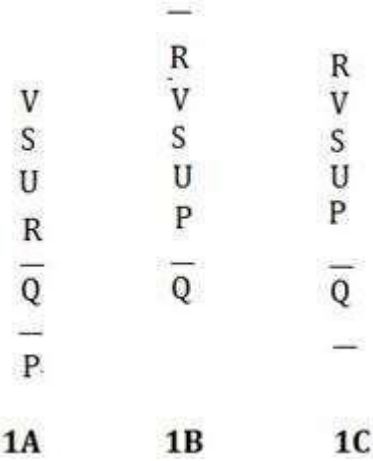
1A **1B** **1C**

Case 2 diagram:



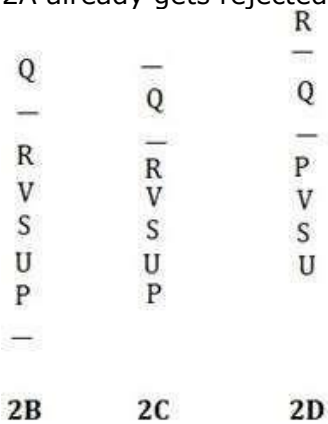
2A **2B** **2C** **2D**

Take Case 1:
One box is kept between V and U. Box U is below box V. 3 boxes are kept between R and P. Box R is above P.



1A **1B** **1C**

There are as many boxes between R and W as W and S. But no diagram is follow this condition so all cases 1 gets rejected.
Take case 2:
One box is kept between V and U. Box U is below box V. 3 boxes are kept between R and P. Box R is above P. As U is below V so case 2A already gets rejected.



2B **2C** **2D**

There are as many boxes between R and W as W and S. Only case 2D satisfy this condition.

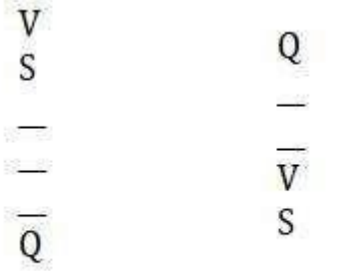
Here is the final arrangement:

R
T
Q
W
P
V
S
U

7. Ans. A.

No box is below U.

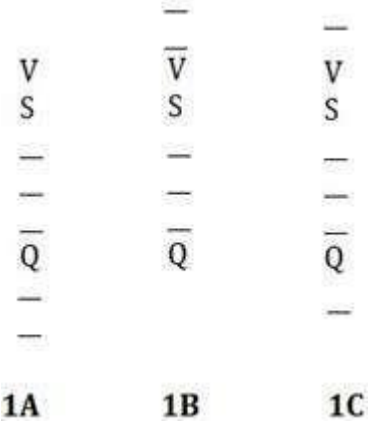
Three boxes are between Q and S. Box V is immediately above box S.



Case 1 **Case 2**

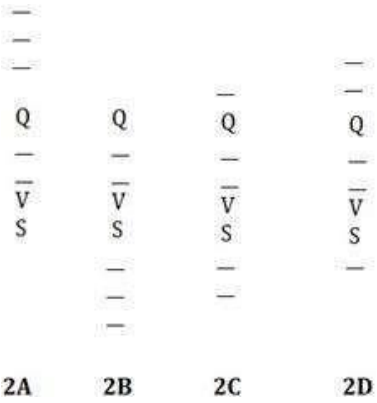
Now we can see that there is no direct information so we have to create diagram for every possibilities.

Case 1 diagram:



1A **1B** **1C**

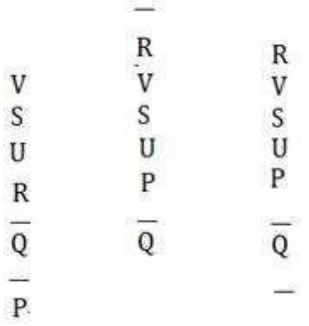
Case 2 diagram:



2A **2B** **2C** **2D**

Take Case 1:

One box is kept between V and U. Box U is below box V. 3 boxes are kept between R and P. Box R is above P.

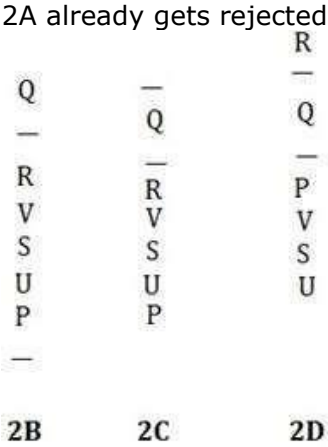


1A **1B** **1C**

There are as many boxes between R and W as W and S. But no diagram is follow this condition so all cases 1 gets rejected.

Take case 2:

One box is kept between V and U. Box U is below box V. 3 boxes are kept between R and P. Box R is above P. As U is below V so case 2A already gets rejected.



2B **2C** **2D**

There are as many boxes between R and W as W and S. Only case 2D satisfy this condition.

Here is the final arrangement:

R
T
Q
W
P
V
S
U

8. Ans. C.
Either conclusion I or conclusion II is true
Explanation:
A ≥ J = N; H > Y > I < S = N
From the statements we have,
A ≥ J = N. So, A ≥ N
Conclusions:
I. A = N
II. A > N
So, I and II are complementary

9. Ans. B.
Only conclusion II is true
Explanation:
U > J ≤ H = S; T ≤ J > F
From the statements we have,
U > J > F. So, U > F.
Also, U > J ≥ T. So, U > T
Conclusions:
I. F ≤ U: it is FALSE
II. U > T: it is TRUE

10. Ans. A.
Only conclusion I is true.
Explanation:
Y > U ≤ H = Q; R ≤ U > M
From the statements we have,
R ≤ U ≤ H = Q. So, R ≤ Q
Also, M < U ≤ H = Q. So, Q > M
Conclusions:
I. R ≤ Q: It is TRUE
II. Q ≥ M: It is FALSE

11. Ans. D.
Neither conclusion I nor conclusion II is true
Explanation:
H < S = L ≥ F > G ≤ Q
From the statements we have,
H < L > G . So, relation between H and G cannot be established.
Also, L > G ≤ W. So, relation between L and W cannot be established.
Conclusions:
I. H > G: It is FALSE
II. W ≤ L: It is FALSE

12. Ans. B.
Statements: T > U ≥ V ≥ W; X < Y = W > Z
After combining both statements:
T > U ≥ V ≥ W=Y >X; W = Y > Z
Conclusions: I. Z > U (not true) {W>Z & W ⇒ U > Z}
II. W < T (true) {U> W & T>U ⇒ T>W}
Therefore only conclusion II is true.

13. Ans. B.
Given number - 8367284
As per the question - 2' is subtracted from each even digit and '1' is added to each odd digit

8 -2 = 6
3 + 1 =4
6 -2 = 4
7 + 1 = 8
2 - 2 = 0
8 - 2 = 6
4 - 2 = 2

New number formed - is 6448062

Only two digits appear twice in the new number thus formed which is 6 & 4.

14. Ans. D.
Before rearranging as descending order:935126
After rearranging as descending order: 965321
9, 5 and 2 are on the same place as before.
So, there are 3 digits

15. Ans. E.

1	2	3	4	5	6	7	8	9	10	11
S	P	O	N	T	A	N	E	O	U	S

Meaningful words = NEST, SENT, NETS, TENS

16. Ans. B.
The code for 'mind' is - dh

The codes are given below -

Intellectual - ga

bright - pa/la

and - la/pa

mind - dh

students - mt

Fresh - ni

Clear - mi

thoughts -pz/ma

in - ma/pz

17. Ans. C.
The code for 'bright and clear' - la pa mi

The codes are given below -

Intellectual - ga

bright - pa/la

and - la/pa

mind - dh

students - mt

Fresh - ni

Clear - mi

thoughts -pz/ma

in - ma/pz

18. Ans. A.
The code 'ni' stand for fresh

The codes are given below -

Intellectual - ga

bright - pa/la

and - la/pa

mind - dh

students - mt

Fresh - ni

Clear - mi

thoughts -pz/ma

in - ma/pz

19. Ans. D.
The code for 'thoughts' is either - pz/ma

The codes are given below -

Intellectual - ga

bright - pa/la

and - la/pa

mind - dh

students - mt

Fresh - ni

Clear - mi

thoughts -pz/ma

in - ma/pz

20. Ans. A.
The code 'ga' stand for - Intellectual

The codes are given below -

Intellectual - ga

bright - pa/la

and - la/pa

mind - dh

students - mt

Fresh - ni

Clear - mi

thoughts -pz/ma

in - ma/pz

21. Ans. B.
R bought car in August.
Case 1: If U bought car in June-
U bought a car in a month which was having 30 days but not in September. So U bought

car either in June or November.

Three persons bought cars between U and T. So T bought car in October. Two persons bought cars between T and Q so Q bought car in July. P bought car one of the months before Q so this case gets rejected.

Month	Person
June(30)	U
July(31)	Q
August(31)	
September(30)	
October(31)	T
November(30)	
December(31)	

Case 2: If U bought car in November-
U bought a car in a month which was having 30 days but not in September. So U bought car either in June or November.

Three persons bought cars between U and T. So T bought car in July. Two persons bought cars between T and Q so Q bought car in October. Three persons bought cars between Q and P. Two persons bought cars between P and V so V bought car in September. S bought car one of the months after V so S bought car in December and R bought car in August.
Here is the final table:

Month	Person
June(30)	P
July(31)	T
August(31)	R
September(30)	V
October(31)	Q
November(30)	U
December(31)	S

22. Ans. D.
All the persons bought the car in a month which was having 31 days except P
Case 1: If U bought car in June-
U bought a car in a month which was having 30 days but not in September. So U bought car either in June or November.

Three persons bought cars between U and T. So T bought car in October. Two persons bought cars between T and Q so Q bought car in July. P bought car one of the months before Q so this case gets rejected.

Month	Person
June(30)	U
July(31)	Q
August(31)	
September(30)	
October(31)	T
November(30)	
December(31)	

Case 2: If U bought car in November-
U bought a car in a month which was having 30 days but not in September. So U bought car either in June or November.

Three persons bought cars between U and T. So T bought car in July. Two persons bought cars between T and Q so Q bought car in October. Three persons bought cars between Q and P. Two persons bought cars between P and V so V bought car in September. S bought car one of the months after V so S bought car in December and R bought car in August.
Here is the final table:

Month	Person
June(30)	P
July(31)	T
August(31)	R
September(30)	V
October(31)	Q
November(30)	U
December(31)	S

23. Ans. A.
Only one person bought car between P and R.
Case 1: If U bought car in June-
U bought a car in a month which was having 30 days but not in September. So U bought car either in June or November.

Three persons bought cars between U and T. So T bought car in October. Two persons bought cars between T and Q so Q bought car in July. P bought car one of the months before Q so this case gets rejected.

Month	Person
June(30)	U
July(31)	Q
August(31)	
September(30)	
October(31)	T
November(30)	
December(31)	

Case 2: If U bought car in November-
U bought a car in a month which was having 30 days but not in September. So U bought car either in June or November.

Three persons bought cars between U and T. So T bought car in July. Two persons bought cars between T and Q so Q bought car in October. Three persons bought cars between Q and P. Two persons bought cars between P and V so V bought car in September. S bought car one of the months after V so S bought car in December and R bought car in August.

Here is the final table:

Month	Person
June(30)	P
July(31)	T
August(31)	R
September(30)	V
October(31)	Q
November(30)	U
December(31)	S

24. Ans. E.
None is correct.

Case 1: If U bought car in June-
U bought a car in a month which was having 30 days but not in September. So U bought car either in June or November.

Three persons bought cars between U and T. So T bought car in October. Two persons bought cars between T and Q so Q bought car in July. P bought car one of the months before Q so this case gets rejected.

Month	Person
June(30)	U
July(31)	Q
August(31)	
September(30)	
October(31)	T
November(30)	
December(31)	

Case 2: If U bought car in November-
U bought a car in a month which was having 30 days but not in September. So U bought car either in June or November.

Three persons bought cars between U and T. So T bought car in July. Two persons bought cars between T and Q so Q bought car in October. Three persons bought cars between Q and P. Two persons bought cars between P and V so V bought car in September. S bought car one of the months after V so S bought car in December and R bought car in August.

Here is the final table:

Month	Person
June(30)	P
July(31)	T
August(31)	R
September(30)	V
October(31)	Q
November(30)	U
December(31)	S

25. Ans. B.
2 persons bought car after Q.

Case 1: If U bought car in June-
U bought a car in a month which was having 30 days but not in September. So U bought car either in June or November.

Three persons bought cars between U and T. So T bought car in October. Two persons bought cars between T and Q so Q bought car in July. P bought car one of the months before Q so this case gets rejected.

Month	Person
June(30)	U
July(31)	Q
August(31)	
September(30)	
October(31)	T
November(30)	
December(31)	

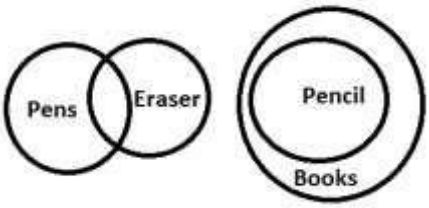
Case 2: If U bought car in November-
U bought a car in a month which was having 30 days but not in September. So U bought car either in June or November.

Three persons bought cars between U and T. So T bought car in July. Two persons bought cars between T and Q so Q bought car in October. Three persons bought cars between Q and P. Two persons bought cars between P and V so V bought car in September. S bought car one of the months after V so S bought car in December and R bought car in August.

Here is the final table:

Month	Person
June(30)	P
July(31)	T
August(31)	R
September(30)	V
October(31)	Q
November(30)	U
December(31)	S

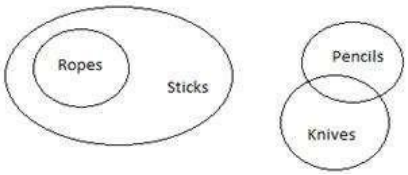
26. Ans. D.



Conclusion I is false

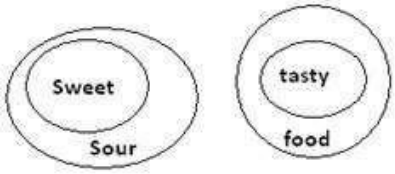
Conclusion II is false

27. Ans. D.

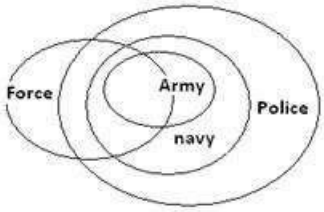


if neither Conclusion I nor II follows.

28. Ans. E.

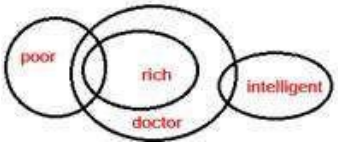


29. Ans. A.



Only **Conclusion** I follows

30. Ans. E.

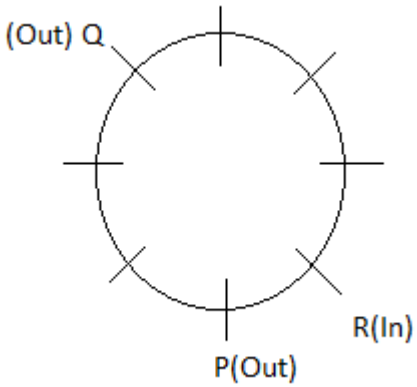


Some intelligent are doctor. So, All intelligent being doctors is a possibility.

31. Ans. C.

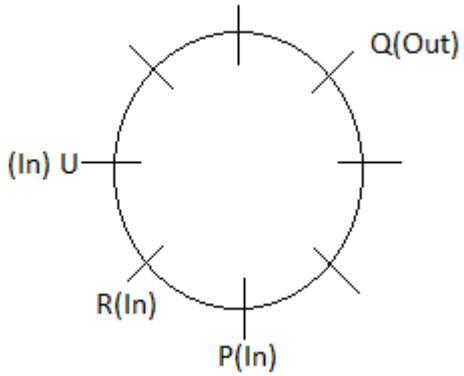
According to first clue, P is either facing inside or outside

Scenario I: P is facing outside

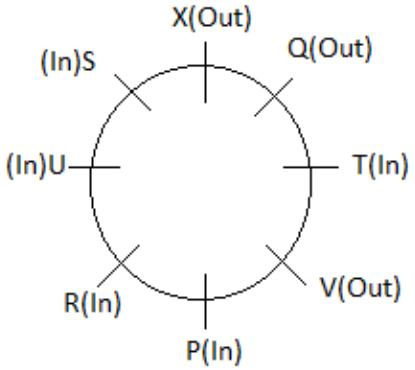


U sits immediate left of R which is not possible in this scenario.

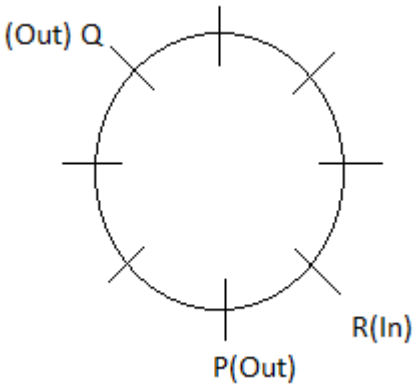
Scenario II: P is facing inside



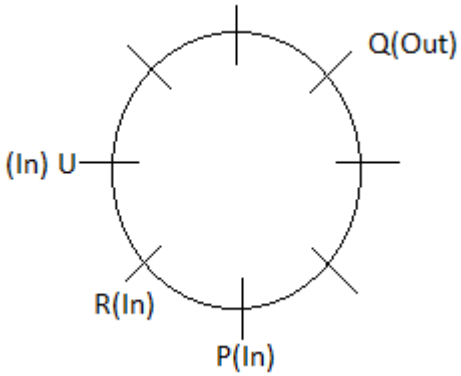
Using the other clues, we get



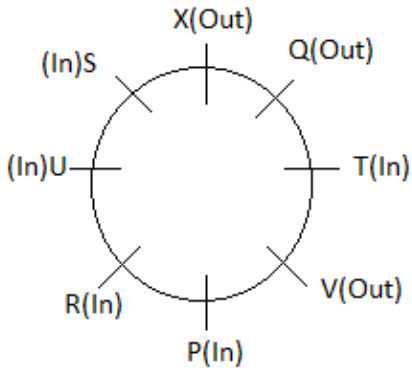
32. Ans. D.
According to first clue, P is either facing inside or outside
Scenario I: P is facing outside



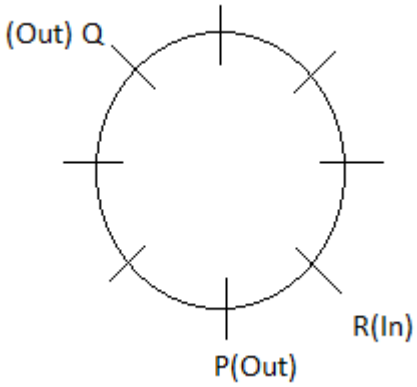
U sits immediate left of R which is not possible in this scenario.
Scenario II: P is facing inside



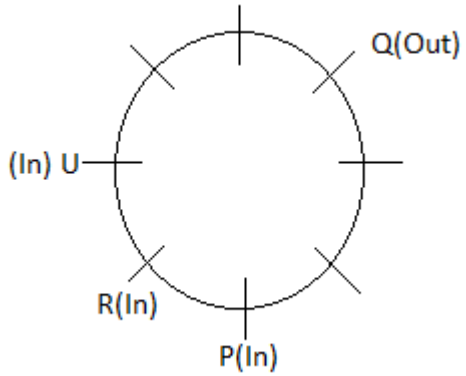
Using the other clues, we get



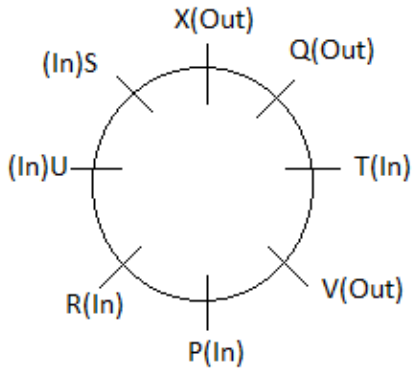
33. Ans. D.
According to first clue, P is either facing inside or outside
Scenario I: P is facing outside



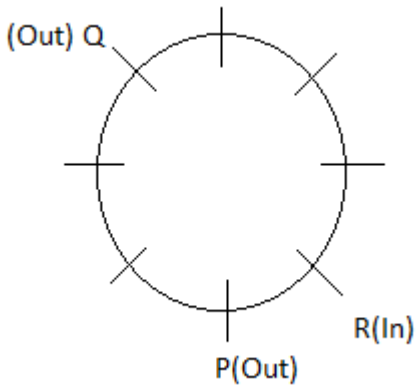
U sits immediate left of R which is not possible in this scenario.
Scenario II: P is facing inside



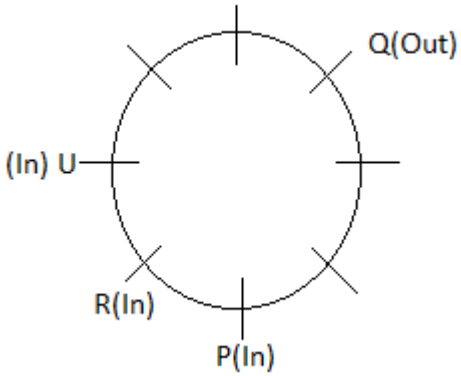
Using the other clues, we get



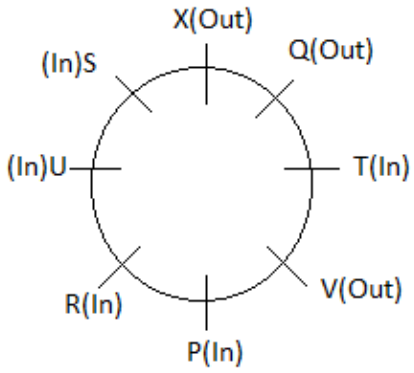
34. Ans. B.
According to first clue, P is either facing inside or outside
Scenario I: P is facing outside



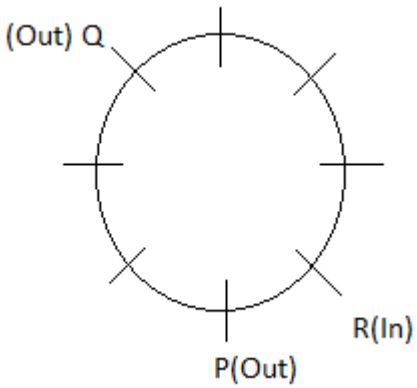
U sits immediate left of R which is not possible in this scenario.
Scenario II: P is facing inside



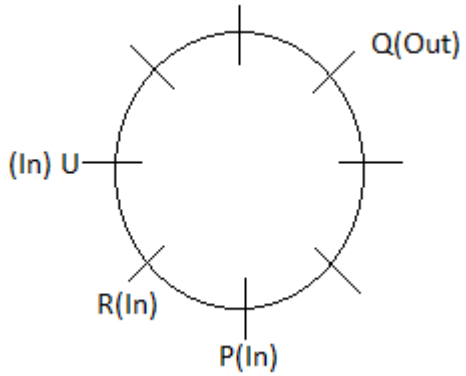
Using the other clues, we get

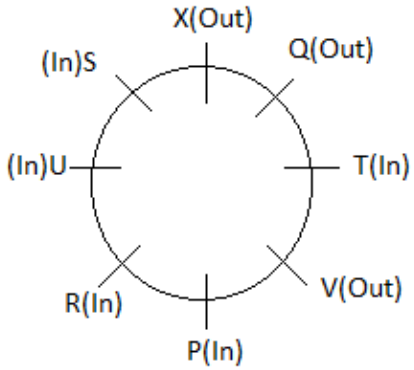


35. Ans. B.
According to first clue, P is either facing inside or outside
Scenario I: P is facing outside



U sits immediate left of R which is not possible in this scenario.
Scenario II: P is facing inside





Using the other clues, we get

36. Ans. C.

All the persons are at the end except B.

• Two persons are sitting between M and N. Neither of them is at corner. The one who is facing D is neighbor of N.

Case 1A:

Row 1		N			M	
Row 2	D					

Case 1B:

Row 1		N			M	
Row 2			D			

Case 2A:

Row 1		M			N	
Row 2						D

Case 2B:

Row 1		M			N	
Row 2				D		

Take case 1A:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than two people sit between C and B it means at least 3 people sit between C and B from this cannot be possible so this case gets rejected.

Row 1		N		O	M	Q
Row 2	D					F

Take case 1B:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M so E must be at the left end. More than two people sit between C and B it means at least 3 people sit between C and B from this cannot be possible so this case gets rejected.

Row 1		N		O	M	Q
Row 2	E		D			F

Take case 2A:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M it means 3 people are between them but from this

cannot be possible so this case gets rejected.

Row 1	O	M	Q		N	
Row 2			F			D

Take case 2B:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M so E must be at the right end. More than two people sit between C and B it means at least 3 people sit between C and B so either C or B at the left end. P is not at any corner so P is facing D and R must be at the end. The immediate neighbor of R is facing B it means N is facing B and C must be at the end and A is facing M.

Here is the final arrangement:

Row 1	O	M	Q	P	N	R
Row 2	C	A	F	D	B	E

37. Ans. D.

D is facing P.

• Two persons are sitting between M and N. Neither of them is at corner. The one who is facing D is neighbor of N.

Case 1A:

Row 1		N			M	
Row 2	D					

Case 1B:

Row 1		N			M	
Row 2			D			

Case 2A:

Row 1		M			N	
Row 2						D

Case 2B:

Row 1		M			N	
Row 2				D		

Take case 1A:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than two people sit between C and B it means at least 3 people sit between C and B from this cannot be possible so this case gets rejected.

Row 1		N		O	M	Q
Row 2	D					F

Take case 1B:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M so E must be at the left end. More than two people sit between C and B it means at least 3 people sit between C and B from this cannot be possible so this case gets rejected.

Row 1		N		O	M	Q
Row 2	E		D			F

Take case 2A:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than

2 people sit between E and the one who is facing M it means 3 people are between them but from this cannot be possible so this case gets rejected.

Row 1	O	M	Q		N	
Row 2			F			D

Take case 2B:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M so E must be at the right end. More than two people sit between C and B it means at least 3 people sit between C and B so either C or B at the left end. P is not at any corner so P is facing D and R must be at the end. The immediate neighbor of R is facing B it means N is facing B and C must be at the end and A is facing M.

Here is the final arrangement:

Row 1	O	M	Q	P	N	R
Row 2	C	A	F	D	B	E

38. Ans. D.

3 persons sit between O and N.

• Two persons are sitting between M and N. Neither of them is at corner. The one who is facing D is neighbor of N.

Case 1A:

Row 1		N			M	
Row 2	D					

Case 1B:

Row 1		N			M	
Row 2			D			

Case 2A:

Row 1		M			N	
Row 2						D

Case 2B:

Row 1		M			N	
Row 2				D		

Take case 1A:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than two people sit between C and B it means at least 3 people sit between C and B from this cannot be possible so this case gets rejected.

Row 1		N		O	M	Q
Row 2	D					F

Take case 1B:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M so E must be at the left end. More than two people sit between C and B it means at least 3 people sit between C and B from this cannot be possible so this case gets rejected.

Row 1		N		O	M	Q
Row 2	E		D			F

Take case 2A:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than

2 people sit between E and the one who is facing M it means 3 people are between them but from this cannot be possible so this case gets rejected.

Row 1	O	M	Q		N	
Row 2			F			D

Take case 2B:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M so E must be at the right end. More than two people sit between C and B it means at least 3 people sit between C and B so either C or B at the left end. P is not at any corner so P is facing D and R must be at the end. The immediate neighbor of R is facing B it means N is facing B and C must be at the end and A is facing M.

Here is the final arrangement:

Row 1	O	M	Q	P	N	R
Row 2	C	A	F	D	B	E

39. Ans. B.

R is 3rd to the left of Q.

• Two persons are sitting between M and N. Neither of them is at corner. The one who is facing D is neighbor of N.

Case 1A:

Row 1		N			M	
Row 2	D					

Case 1B:

Row 1		N			M	
Row 2			D			

Case 2A:

Row 1		M			N	
Row 2						D

Case 2B:

Row 1		M			N	
Row 2				D		

Take case 1A:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than two people sit between C and B it means at least 3 people sit between C and B from this cannot be possible so this case gets rejected.

Row 1		N		O	M	Q
Row 2	D					F

Take case 1B:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M so E must be at the left end. More than two people sit between C and B it means at least 3 people sit between C and B from this cannot be possible so this case gets rejected.

Row 1		N		O	M	Q
Row 2	E		D			F

Take case 2A:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than

2 people sit between E and the one who is facing M it means 3 people are between them but from this cannot be possible so this case gets rejected.

Row 1	O	M	Q		N	
Row 2			F			D

Take case 2B:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M so E must be at the right end. More than two people sit between C and B it means at least 3 people sit between C and B so either C or B at the left end. P is not at any corner so P is facing D and R must be at the end. The immediate neighbor of R is facing B it means N is facing B and C must be at the end and A is facing M.

Here is the final arrangement:

Row 1	O	M	Q	P	N	R
Row 2	C	A	F	D	B	E

40. Ans. C.

A and M are facing each other.

• Two persons are sitting between M and N. Neither of them is at corner. The one who is facing D is neighbor of N.

Case 1A:

Row 1		N			M	
Row 2	D					

Case 1B:

Row 1		N			M	
Row 2			D			

Case 2A:

Row 1		M			N	
Row 2						D

Case 2B:

Row 1		M			N	
Row 2				D		

Take case 1A:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than two people sit between C and B it means at least 3 people sit between C and B from this cannot be possible so this case gets rejected.

Row 1		N		O	M	Q
Row 2	D					F

Take case 1B:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M so E must be at the left end. More than two people sit between C and B it means at least 3 people sit between C and B from this cannot be possible so this case gets rejected.

Row 1		N		O	M	Q
Row 2	E		D			F

Take case 2A:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than

2 people sit between E and the one who is facing M it means 3 people are between them but from this cannot be possible so this case gets rejected.

Row 1	O	M	Q		N	
Row 2			F			D

Take case 2B:

O is 2nd to the right of Q. O is not neighbor of N. The one who is facing O is 2 nd to the left of F. More than 2 people sit between E and the one who is facing M so E must be at the right end. More than two people sit between C and B it means at least 3 people sit between C and B so either C or B at the left end. P is not at any corner so P is facing D and R must be at the end. The immediate neighbor of R is facing B it means N is facing B and C must be at the end and A is facing M.

Here is the final arrangement:

Row 1	O	M	Q	P	N	R
Row 2	C	A	F	D	B	E

Quantitative Aptitude Solutions

1. Ans. B.
   131 – 64 = 67
   67 – 32 = 35
   35 – 16 = 19
   19 – 8 = 11
   11 – 4 = 7
2. Ans. C.
   25 + 3 = 28
   28 – 6 = 22
   22 + 9 = 31
   31 – 12 =19
   19 + 15 = 34
3. Ans. A.
   7 x 0.5 + 1 = 4.5
   4.5 x 1 + 1.5 = 6
   6 x 1.5 + 2 = 11
   11 x 2 + 2.5 = 24.5
4. Ans. B.
   1 + 3 = 4
   4 + 5 = 9
   9 + 9 = 18
   18 + 17 = 35
   Again we have to check here -
   3 + 2 = 5
   5 + 4 = 9
   9 + 8 = 17
   17 + 16 = 33
   We will add 33 in 35 = 68
5. Ans. D.
   3.5 x 2 – 3 = 4
   4 x 3 – 4 = 8
   8 x 4 – 5 = 27
   27 x 5 – 6 = 129
   129 x 6 – 7 = 767
6. Ans. E.
   $2x^2 + 11x + 14 = 0$
   $2x^2 + 4x + 7x + 14 = 0$
   $2x (x+2) + 7 (x+2) = 0$
   $(x+2) (2x+7) = 0$
   i.e. x = -2 or -7/2
   $2y^2 + 13y + 21 = 0$
   $2y^2 + 6y + 7y + 21 = 0$
   $2y (y+3) + 7 (y+3) = 0$
   $(2y+7) (y+3) = 0$
   i.e. y = -3 or -7/2
   Thus, Relationship cannot be established.
7. Ans. B.
   $x^2 – 9x + 20 = 0$
   $x^2 – 5x – 4x – 20 = 0$
   $(x-5) (x-4) = 0$
   i.e. x = 4 or 5
   $y^2 = 16$
   y = (16)1/2
   y = 4 or -4
   Thus, x >= y
8. Ans. C.
   $x^2 – 7x + 12 = 0$
   $x^2 – 4x – 3x + 12 = 0$
   $x (x-4) -3 (x-4) = 0$
   i.e. x = 3 or 4
   $y^2 – 11y + 30 = 0$
   $y^2 – 5y – 6y + 30 = 0$
   $y (y-5) -6 (y-5) = 0$
   i.e. y = 5 or 6
   Thus, y > x
9. Ans. C.
   $x^2 – 8x + 15 = 0$
   $x^2 – 5x – 3x + 15 = 0$
   $x (x-5) -3 (x-5) = 0$

i.e. x = 5 or 3
y^2 - 12y + 36 = 0
y^2 – 6y – 6y + 36 = 0
y (y-6) -6 (y-6) = 0
i.e. y = 6
Thus, y > x

10. Ans. E.
$2x^2$ + 9x + 7 = 0
$2x^2$ + 7x + 2x + 7 = 0
x (2x+7) + 1 (2x+7) = 0
i.e. x = -1 or -7/2
y^2 + 4y + 4 = 0
y^2 + 2y + 2y + 4 = 0
y (y+2) + 2 (y+2) = 0
i.e. y = -2
Thus, Relationship cannot be established between X & Y.

11. Ans. A.
Required Average = (3750+3000+2500+3750+3500)/5 = 3300

12. Ans. B.
Total number of students (males and females together) in University P = (3000 + 3750) = 6750
Total number of students (males and females together) in University R = 2500+4250 = 6750
Ratio = 1:1

13. Ans. B.
Required ratio = (3750 + 3000) : (4250 + 2750) = 27 : 28

14. Ans. D.
Required percentage = [4000/(3750+3000+2500+3750+3500)]*100 = (4000/16500)*100 = 24% (approx)

15. Ans. C.
Required number = 2750 + 50% of 2750 + 3500 = 7625

16. Ans. A.
Number of teachers in physics subject = 1800 $\times\frac{17}{100}$
= 306
Number of female teachers in physics = 306× $\frac{2}{9}$
= 68
Number of male teachers in physics = 306 – 68
= 238

Number of teachers in chemistry subject = 1800× $\frac{23}{100}$
= 414

Required percentage = $\frac{238}{414}$
= 57 % (approx).

17. Ans. B.
Number of teachers in Chemistry subject = 1800 × 23%= 414
Number of teachers in English subject = 1800 × 27%= 486
Number of teachers in Biology subject = 1800 × 12% = 216
Required number = 414 + 486 + 216= 1116

18. Ans. B.
Total number of teachers English and Physics = 486 + 306= 792
Total number of teachers Mathematics and Biology = 234 + 216= 450
Required difference = 792 – 450= 342

19. Ans. E.
Number of teachers in Mathematics subject= 1800×13% = 234
Number of teachers in Hindi subject = 1800×8% = 144
Required ratio = 234 : 114
= 13 : 8

20. Ans. C.
Number of increased Mathematics teachers = 234 + 234×50% = 351
Number of decreased Hindi teachers = 144 – 144×25% = 108
Required total number = 351 + 108
= 459

21. Ans. A.
Average number of students, who appeared for Physics from the year, 2011 to 2015 = (650 + 250 + 350 + 600 + 350)/ 5 = 440

22. Ans. D.
Total number of students who appeared for Physics from 2013 to 2015 = (350 + 600 + 350) = 1300
Total number of students, who appeared for Chemistry from 2011 to 2013 = (800 + 630 + 550) = 1980
Required ratio = 1300 : 1980 = 65:99

23. Ans. B.
Students who did not pass in Physics in the year 2011 = 70/100 * 650 = 455
Students who did not pass in Physics in the year 2015 = 30/100 * 350 = 105
Average = (455 + 105)/2 = 280

24. Ans. D.
Total number of students, who passed in Chemistry in 2011 = 50/100 * 800 = 400
Total number of students who did not pass in Physics in 2015 = 30/100 * 350 = 105
Difference = 400 – 105 = 295

25. Ans. B.
Total number of students who did not pass Physics in 2013 = 50/100 * 350 = 175
Total number of students who did not pass Chemistry in 2013 = 80/100 * 550 = 440
Percentage = 175/440 * 100 = 39.77% = 40%

26. Ans. A.
Take nearest values
21.003 × 39.998 – 209.91 = 126 × ?
630 = 126 × ?
? = 5 (approx)

27. Ans. C.
$(\frac{47}{100}\times 1442-\frac{36}{100}\times 1412)\div 63$
= (677.74 – 508.32) ÷ 63 = 169.42/63 = 2.689 = 3 (Approx)
Hence option C is correct

28. Ans. D.
$?=2418.065+88\div 14.2\times 6$
$?=2418.065+88\times\frac{1}{14.2}\times 6$
? = 2418.065 + 6.197 × 6
? = 2418.065 + 37.18
? = 2455.25
? = 2455 (Approx.)

29. Ans. E.
1200 ÷ 15 x 20 + 400 = 80 x 20 + 400
= 1600 + 400 = 2000 (Approx)
Hence option E is correct

30. Ans. E.
$?=726\times\frac{15.2}{100}\times 643\times\frac{12.8}{100}$
= 110.352 × 82.304
= 9082.41
$\approx$ 9082 (approx)

31. Ans. A.
Third Number = (128 × 5) - (118 × 2) - (126 × 2) = 152

32. Ans. A.
Let present age of Anita= 'x' years
And present age of Bablu= 'y' years
Now, $\frac{\frac{x-4}{2}}{4(y-4)}=5/12$
$12x-48=40y-160$
$3x-10y+28=0$ .....(i)
And,
$\frac{1}{2}(x+8)=(y+8)-2$
$x+8=2y+12$
$x-2y=4$ .....(ii)
Now, from eqn. (i) & (ii)
Bablu present age, Y=10 years

33. Ans. B.
Let 100 (CP)
80 (SP) 110 (SP)
Diff. 30
30 units → 24
1 unit → $\frac{24}{30}$
100 units → $\frac{24}{30}\times 100$ = Rs. 80
CP = Rs. 80

34. Ans. A.
A started a business with investing Rs. 8000 and after some months, B joined with investing Rs. 5000.
Equivalent capital of A
= Rs. 8000 × 12
= Rs. 96000
Let B joined after x months.
So, equivalent capital of B
= Rs. 5000 × (12 – x)
= Rs. 60000 – 5000x
Total profit after one year = Rs. 4250
Share of A = Rs. 3000. Then, the share of B = Rs. 4250 – 3000 = Rs. 1250
So, the ratio of their share;
A : B = 3000 : 1250 = 12 : 5
Now, we can write,
96000/(60000 – 5000x) = 12/5
⇒ 60000 – 5000x = 96000 × (5/12)
⇒ 60000 – 5000x = 8000 × 5
⇒ 5000x = 60000 – 40000
⇒ x = 20000/5000 ⇒ x = 4
∴ After 4 months, B joined in the business.

35. Ans. D.
Let the length of train P and Q are 5a and 4a.
speed of train P = 5a/6
therefore,
(5a/6 + 21)*4 = 5a/3 + 4a
-5a/3 + 4a = 84
a = 36
speed of train P = 36*5/6 = 30m/s

36. Ans. D.
Total no of balls = 8 + 7 + 6 = 21
Let, E be the event where the ball can be selected which is neither yellow nor black
Number of events where the ball can be selected which is neither yellow nor black = 7
P(E) = 7/ 21 = 1/3

37. Ans. D.
Ratio of days of B and C = 2:1

$$\frac{1}{A}+\frac{1}{B}=\frac{1}{60}.....1)$$

$$\frac{1}{A}+\frac{1}{C}=\frac{1}{45}.....2)$$

$$\frac{1}{A}+\frac{2}{B}=\frac{1}{45}.....3)$$

$$1)\ and\ 2)$$

$$\frac{1}{B}=\frac{1}{180}\Rightarrow B=180\ days$$

From equation 1) A =90 days, and C = 90 days
One day work of A, B and C

$$= \frac{1}{90}+\frac{1}{90}+\frac{1}{180}=\frac{2+2+1}{180}=\frac{1}{36}$$

Days = 36 days.

38. Ans. B.
First and second varieties of pulses are mixed in equal proportions
∴Their average price = INR (32+45)/2 = INR 38.5/kg
Let the price of third variety pulse be INR x/kg
The mixture is formed by mixing two varieties becomes one at INR 38.5/kg
By the rule of allegation:

Cost of 1 kg of 1st + 2nd variety INR 38.5 — Cost of 1 kg of 3rd variety INR x

Mean price INR 88

(x − 88) — 49.5

$$\therefore \frac{x-88}{49.5}=\frac{1}{1}$$

⇒ x − 88 = 49.50
⇒ x = 137.50
Hence, the price of the third variety per kg will be INR 137.50/kg

39. Ans. D.
The time required to travel a certain distance upstream is five times than that of downstream for the same distance.
Let the speed of the boat in upstream be x km/hr. and in downstream be 5x km/hr.
We know that if the speed of the downstream is x km/hr and the speed of the upstream is y km/hr, then the speed in still water = 1/2 × (x + y) km/hr.
So, the speed of the boat in still water
= 1/2 × (x + 5x) km/hr.
= 1/2 × 6x km/hr.
= 3x km/hr.
Given, the speed of a boat in still water is (27/4) km/hr.
So, we can write now,
3x = 27/4
⇒ x = 9/4
So, the speed of the boat in upstream = 9/4 km/hr.
And the speed of the boat in downstream = 5 × (9/4) km/hr. = 45/4 km/hr.
Again, we know that if the speed of the downstream is x km/hr and the speed of the upstream is y km/hr, then the speed of the stream = 1/2 × (x − y) km/hr.
∴ The speed of the stream = 1/2 × [(45/4) − (9/4)] km/hr.
= 1/2 × 9 km/hr.
= 9/2 km/hr.
= 4.5 km/hr.

40. Ans. C.
Curved Surface Area of Cylinder = 2πrh
Total Surface Area of Cylinder = 2πr (h+r)
According to question, 2πrh : 2πr (h+r) = 3:5
i.e. h/ (h+r) = 3/5
i.e., 2h = 3r − (a)
Also, Curved surface area of the cylinder = 1848 metre square
i.e. 2πrh = 1848
From (a), 2π (2/3h) * h = 1848
On solving the above equation, h = 21m