

## IBPS RRB Clerk Pre 2025 Memory Based Paper Based on 6th December 2nd Shift

**Directions (1-5):** Study the following series carefully and answer the question given below:

P & K \* V Z L # W A % S R ! M @ X F Y ? Q + C ^ U T Z \$

**Q1. Which symbol is fifth to the right of the third letter from the left end in the series?**

- (a) \*
- (b) +
- (c) !
- (d) ?
- (e) &

**Q2. If all symbols and vowels are removed from the series, which element is sixth from the right end in the remaining series?**

- (a) F
- (b) X
- (c) M
- (d) T
- (e) R

**Q3. Which element is fourth to the right of the seventh symbol from the right end?**

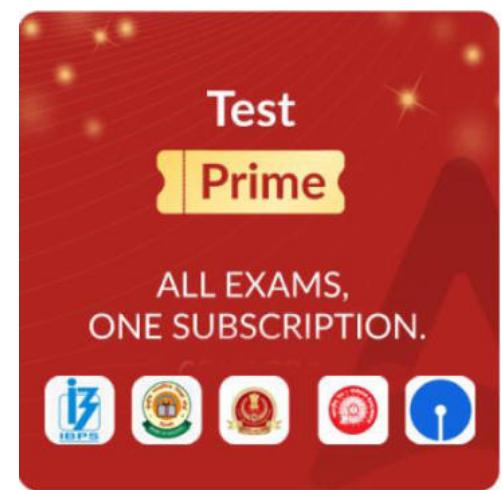
- (a) R
- (b) M
- (c) !
- (d) X
- (e) F

**Q4. How many letters in the series are immediately preceded and immediately followed by a symbol?**

- (a) One
- (b) Two
- (c) Three
- (d) Four
- (e) None

**Q5. How many vowels in the series are immediately followed by a letter?**

- (a) One
- (b) Two
- (c) Three
- (d) Four
- (e) None



**Directions (6-8): Study the following information carefully and answer the questions given below:**

A certain number of persons sit in a row and face north. H sits third to the right of K. Five persons sit between H and D. E sits immediately left of K. Only two persons sit between D and J. A sits second to the right of J. A and D are not immediate neighbours. Number of persons sit between E and D is same as the number of persons sit to the right of D. E sits second from one the ends of the row.

**Q6. Who among the following persons sits 11<sup>th</sup> to the left of A?**

- (a) K
- (b) E
- (c) H
- (d) None of these
- (e) D

**Q7. What is the position of J in the row?**

- (a) Sixth from the left end
- (b) Sixth from the right end
- (c) Third from the right end
- (d) Seventh from the right end
- (e) Third from the left end

**Q8. How many persons sit in the row?**

- (a) 20
- (b) 16
- (c) 18
- (d) 19
- (e) 21

**Directions (9-12):** In this question, the relationship between different elements is shown in the statements. The statements are followed by two conclusions. Study the conclusions based on the given statements and select the appropriate answer:

**Q9. Statements:**  $K \leq F < R = G > U < V = W$

**Conclusions:**

- I.  $R > W$
- II.  $K < G$

- (a) If only conclusion I is true
- (b) If only conclusion II is true
- (c) If either conclusion I or II is true
- (d) If both conclusions I and II are true
- (e) If neither conclusion I nor II is true

**Q10. Statements:**  $M > B \leq C \leq A = E \leq O \geq F > G = P$

**Conclusions:**

- I.  $P < O$
- II.  $O \geq B$

- (a) If only conclusion I is true
- (b) If only conclusion II is true
- (c) If either conclusion I or II is true
- (d) If both conclusions I and II are true
- (e) If neither conclusion I nor II is true

**Q11. Statements:**  $L = M \leq N \leq O = P > Q \leq R$

**Conclusions:**

- I.  $P > L$
- II.  $N < R$

- (a) If only conclusion I is true
- (b) If only conclusion II is true
- (c) If either conclusion I or II is true
- (d) If both conclusions I and II are true
- (e) If neither conclusion I nor II is true

**Q12. Statements:**  $X \geq Y > Z = A > B < C > D = E$

**Conclusions:**

- I.  $X > B$
- II.  $Z \leq E$

- (a) If only conclusion I is true
- (b) If only conclusion II is true
- (c) If either conclusion I or II is true
- (d) If both conclusions I and II are true
- (e) If neither conclusion I nor II is true

**Directions (13-15): Study the information carefully and answer the questions given below.**

C is the sister-in-law of D. A is the son of H. B is the mother-in-law of G. G is the mother of E. E is the sister of A. There is no single parent in the family.

**Q13. How is A related to D?**

- (a) Son
- (b) Nephew
- (c) Uncle
- (d) Son-in-law
- (e) Grandson

**Q14. How many female members are there in the family?**

- (a) Four
- (b) Three
- (c) Five
- (d) Can't be determined
- (e) Six

**Q15. How is H related to D?**

- (a) Grandson
- (b) Daughter
- (c) Son
- (d) Uncle
- (e) None of these

**Q16.** In the number '5693728', if all the digits are arranged in descending order from left end, then how many digits remain unchanged at its position in the new number formed after rearrangement?

- (a) None
- (b) Two
- (c) Three
- (d) Five
- (e) One

**Directions (17-21): Read the given information carefully and answer the related questions:**

Seven boxes A, B, C, D, E, F and G are placed one above the other in a stack but not in the same order as given. Three boxes are placed between box B and box D. Box A is placed immediately below box B. Number of boxes placed below box A is same as the number of boxes placed above box G. One box is placed between box G and box C which is placed above box G. Box E is not placed at the bottommost position.

**Q17. Which box is placed at third position from top?**

- (a) E
- (b) G
- (c) B
- (d) D
- (e) A

**Q18. How many boxes are placed above box C?**

- (a) One
- (b) Three
- (c) Four
- (d) Five
- (e) Two

**Q19. If all the boxes are arranged in alphabetical order from bottom to top, then how many boxes will remain same at their position?**

- (a) Three
- (b) None
- (c) Four
- (d) Two
- (e) One

**Q20. What is the position of box G from bottom?**

- (a) First
- (b) Third
- (c) Second
- (d) Fifth
- (e) Sixth

**Q21. Which of the following box is placed two boxes below box A?**

- (a) G
- (b) F
- (c) C
- (d) B
- (e) D

**Directions (22-25): The following questions are based on the five three-digit numbers given below:**

492    625    381    967    154

**Q22. If the first and third digit of each number is interchanged within the number, then which of the following will be the second highest number?**

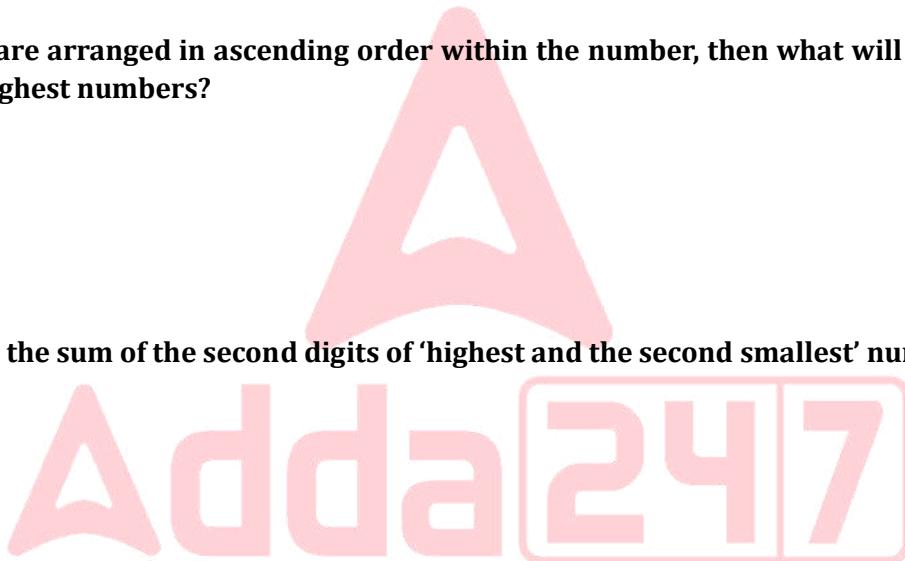
- (a) 492
- (b) 154
- (c) 625
- (d) 381
- (e) 967

**Q23. If the digits are arranged in ascending order within the number, then what will be the sum of first and the second highest numbers?**

- (a) One
- (b) Two
- (c) Three
- (d) Four
- (e) None

**Q24. What will be the sum of the second digits of 'highest and the second smallest' number?**

- (a) 15
- (b) 10
- (c) 17
- (d) 14
- (e) 19



**Q25. If 2 is added to each number then how many numbers will be completely divisible by 3?**

- (a) None
- (b) One
- (c) Two
- (d) Three
- (e) More than three

**Directions (26-30): Read the given information carefully and answer the related question:**

A, B, C, D, E, F and G were born on same date of different months in a year (but not in same order as given). The months are – March, April, May, June, July, August and September.

A was born in the month having even number of days. Three persons were born between A and C. G is two months older to C. E was born immediately after G. Two persons were born between E and B. D is younger to B.

**Q26. Who among the following was born in July?**

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- (a) F
- (b) B
- (c) E
- (d) D
- (e) C

**Q27. Four of the following five are similar in a certain manner and form a group. Who among the following is not related to the group?**

- (a) A
- (b) D
- (c) B
- (d) C
- (e) G

**Q28. D was born in which of the following month?**

- (a) May
- (b) March
- (c) September
- (d) August
- (e) June

**Q29. How many persons were born between G and F?**

- (a) None
- (b) Four
- (c) One
- (d) Three
- (e) Two

**Q30. If all the persons are arranged in alphabetical order from March to September, then how many persons will remain same at their position?**

- (a) Two
- (b) One
- (c) Four
- (d) None
- (e) Three

**Directions (31-33):** In the question below, some statements are given followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Give answer-

**Q31. Statements:** Only a few cup is can

All cup is kettle

No can is jar

**Conclusions:**

I. Some kettle is not jar

II. No Cup is jar

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(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

**Q32. Statements:** Some colours are pens

All pens are pencils

Only a few pencils are glitters

**Conclusions:**

I. All pencils being glitters is a possibility  
 II. Some colours are pencils  
 (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

**Q33. Statements:** All lines are square

Only a few square are circles

**Conclusions:**

I. Some square are not circles  
 II. Some lines being circles is a possibility  
 (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

**Q34.** In the question below, some statements are given followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions ***logically doesn't follow*** from the given statements, disregarding commonly known facts. Give answer-

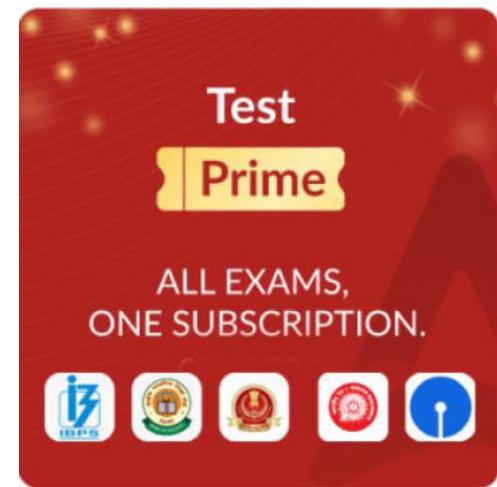
**Statements:** All fruits are vegetable

Only a few vegetable are carrot

Some carrot are not tomato

**Conclusions:**

I. All fruits being tomato is a possibility  
 II. No vegetable is carrot  
 (a) If only conclusion I  
 (b) If only conclusion II  
 (c) If either conclusion I or II  
 (d) If neither conclusion I nor II  
 (e) If both conclusions I and II



**Q35.** In the word ‘**SOLVENT**’, how many pairs of the letters have the same number of letters between them (both forward and backward direction) as in the English alphabet?

- (a) One
- (b) Two
- (c) Four
- (d) Three
- (e) Five

**Directions (36-40): Read the given information carefully and answer the related question:**

Seven persons A, B, C, D, E, F and G sit around a circular table facing inside (equidistant from each other) but not in same order as given.

One person sits between G and D. B does not sit adjacent to G and D. C sits second to the left of B. The number of persons sit between B and G (when counted from the right of B) is one more than the number of persons A and E (when counted from the left of E).

**Q36. What is the position of F with respect to B?**

- (a) Immediate left
- (b) Third to the right
- (c) Second to the right
- (d) Immediate right
- (e) Third to the left

**Q37. Who among the following sits second to the right of G?**

- (a) E
- (b) D
- (c) A
- (d) F
- (e) B

**Q38. How many persons sit between D and E when counted from the right of D?**

- (a) None
- (b) Two
- (c) Four
- (d) One
- (e) Three

**Q39. If B is related to E, in the similar way C is related to G, then who among the following is related to F?**

- (a) E
- (b) A
- (c) D
- (d) C
- (e) B

**Q40. If all the are made to sit in alphabetical order starting from A in clockwise direction, then how many persons will remain same at their position (excluding A)?**

- (a) One
- (b) Two
- (c) Three
- (d) Four
- (e) Five

**Directions (41-45):** The table given below shows the marks scored by P, Q, R, S and T in three different subjects (i.e. English, Hindi and Maths). Read the data carefully and answer the following question.

Students	English	Hindi	Maths
P	120	100	130
Q	100	132	70
R	80	130	90
S	50	150	110
T	40	80	100

**Q41. Find the ratio of marks scored by P and Q in English to marks score by S in maths.**

- (a) 7:9
- (b) 3:2
- (c) 3:1
- (d) 2:1
- (e) 1:1

**Q42. The total marks scored by P and T in Hindi is what percentage of marks scored by S in English and in Hindi together.**

- (a) 90%
- (b) 33%
- (c) 66%
- (d) 76%
- (e) 75%

**Q43. If total mark score by A in all the subjects is equal to sum of the marks scored by P and R together in all the given subjects and the ratio of marks scored by A in English, hindi and maths is 3:6:4 respectively, find the marks obtained by A in English.**

- (a) 120
- (b) 150
- (c) 100
- (d) 190
- (e) 110

**Q44. Find the average mark scored by all in Hindi.**

- (a) 114.4
- (b) 113.4
- (c) 118.4
- (d) 117.4
- (e) 110.4

**Q45. Find the difference between mark score by T and Q together in English and R and S together in Hindi.**

- (a) 120
- (b) 150
- (c) 100
- (d) 140
- (e) 110

**Directions (46-50): The bar graph shows the number of students taking online and off-line classes on five different days. Read the data and answer the following question.**



**Q46. Find the difference between total student taking online classes and total student taking off-line classes on all the given days.**

- (a) 120
- (b) 150
- (c) 100
- (d) 190
- (e) 110

**Q47. Find the ratio of student taking online classes on Monday and Tuesday together to students taking off-line classes on Friday.**

- (a) 7:9
- (b) 3:2
- (c) 3:1
- (d) 2:1
- (e) 7:8

**Q48.** On Saturday the number of online classes taken by students is 20% less than the off-line classes taken by students on Monday, then find the sum of online class taken by students on Saturday and Friday.

- (a) 120
- (b) 150
- (c) 100
- (d) 140
- (e) 110

**Q49.** Online class taken by students on Monday and Friday is what percentage of total off-line classes taken by students on Wednesday.

- (a) 120
- (b) 150
- (c) 100
- (d) 140
- (e) 110

**Q50.** If the ratio of online classes taken by students on Friday and Sunday is 5:4, then the online classes taken on Sunday is what percentage more/less than offline classes taken by students on Tuesday.

- (a) 20
- (b) 50
- (c) 0
- (d) 40
- (e) 10

**Q51.** A 42-liter mixture contains milk and water in the ratio 2 : 5, respectively. After adding some quantity of milk, the ratio of water to milk becomes 1 : 4. Find the quantity of milk added (in liters).

- (a) 120
- (b) 108
- (c) 90
- (d) 85
- (e) 112

**Q52.** A and B together can complete a piece of work in 15 days, while B alone can complete it in 36 days. If both A and B start working together, but B leaves 6 days before the work is finished, find the total time taken by A to complete the remaining work.

- (a) 12.5
- (b) 17.5
- (c) 15.5
- (d) 11.5
- (e) 19.5

**Q53.** The breadth of a rectangle is 25% less than the length of the rectangle. If the perimeter of the rectangle is 70 cm, then find the area of the rectangle (in  $\text{cm}^2$ ).

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- (a) 300
- (b) 450
- (c) 320
- (d) 280
- (e) 480

**Q54.** A shopkeeper allowed a 20% discount off the marked price of an article. If he earned a profit of Rs 450 and the difference between the cost price and marked price of the article is Rs 1900, then find the cost price of the article (in Rs).

- (a) 5650
- (b) 5850
- (c) 5350
- (d) 5550
- (e) 5150

**Q55.** A can travel 54 km in 2 hours. If the speed of A is 20% more than the speed of B, then how many km are travelled by B in 4 hours (in km)?

- (a) 100
- (b) 80
- (c) 90
- (d) 75
- (e) 120

**Q56.** The upstream speed of a boat is 6 km/hr, and the speed of a stream is 2 km/hr. Find the time taken by the boat to cover 80 km downstream (in hours).

- (a) 12
- (b) 7
- (c) 5
- (d) 10
- (e) 8

**Q57.** A, B, and C started a business with investments of Rs 2800, Rs 5400, and Rs 3600, respectively. After 8 months, A left the business, and at the end of the year, the profit share of B is Rs 2430. Find the total profit (in Rs).

- (a) 4080
- (b) 4480
- (c) 4980
- (d) 4890
- (e) 4908

**Q58.** A man invested Rs  $X$  in compound interest at 10% p.a. for three years and received interest of Rs 1324. If he invested Rs  $(X + 500)$  in simple interest for two years at 15% p.a., then find the simple interest he received (in Rs).

- (a) 1800
- (b) 1250
- (c) 1550
- (d) 1400
- (e) 1350

**Q59.** Pipe A can fill a tank in 15 hours and Pipe B can fill it in 20 hours. Both pipes are opened together, but after 4 hours, Pipe A is closed. Find the total time (in hours) taken to fill the tank.

- (a)  $14\frac{2}{3}$
- (b)  $14\frac{1}{3}$
- (c)  $16\frac{2}{3}$
- (d)  $12\frac{2}{3}$
- (e)  $15\frac{1}{3}$

**Q60.** Two trains of lengths 180 m and 120 m are moving in opposite directions at speeds of 54 km/h and 72 km/h respectively. How long will they take to completely cross each other (in seconds)?

- (a)  $40/7$
- (b)  $60/7$
- (c)  $44/7$
- (d)  $66/7$
- (e)  $70/7$

**Directions (61-65):** What will come in the place of question mark (?) in the following questions.

**Q61.** 2, 4, 12, ?, 240, 1440

- (a) 24
- (b) 48
- (c) 60
- (d) 72
- (e) 84

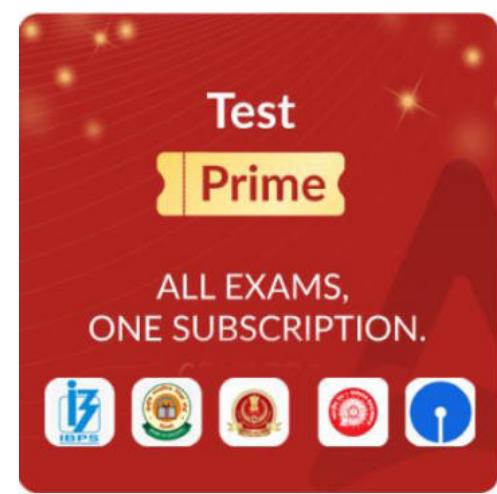
**Q62.** 1200, 300, 150, 112.5, ?, 140.625

- (a) 128
- (b) 112.5
- (c) 225
- (d) 227.5
- (e) 126.5

**Q63.** 1600, 1088, 1039, 823, 798, ?

- (a) 754
- (b) 714
- (c) 704
- (d) 724
- (e) 734

**Q64.** 147, ?, 111, 88, 59, 28



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- (a) 130
- (b) 126
- (c) 128
- (d) 133
- (e) 116

**Q65.** 148, ?, 203, 243, 294, 358, 437

- (a) 172
- (b) 162
- (c) 150
- (d) 160
- (e) 182

**Directions (66-80): What will come in the place of question (?) mark in the following questions?**

**Q66.**  $50 - 45 + 145 = 2.5 \times ?$

- (a) 50
- (b) 60
- (c) 30
- (d) 20
- (e) 10

**Q67.**  $\sqrt{225} \div \sqrt{25} \times 6 = ?\% \text{ of } 200$

- (a) 6
- (b) 9
- (c) 12
- (d) 4
- (e) 15

**Q68.**  $16 \times 25 + 280 - (25)^2 = 25\% \text{ of } ?$

- (a) 180
- (b) 260
- (c) 220
- (d) 240
- (e) 300

**Q69.**  $\sqrt{49} \times \sqrt{196} + 430 = (?)^2 - 48$

- (a) 34
- (b) 14
- (c) 16
- (d) 26
- (e) 24

**Q70.**  $118 + \sqrt{484} + \frac{6}{13} \times 260 + ? = (17)^2$

- (a) 29
- (b) 31
- (c) 27
- (d) 39
- (e) 19

**Q71.**  $108 \div 3 \times 5 - 225 \div 9 \times 4 = 400\% \text{ of ?}$

- (a) 50
- (b) 10
- (c) 30
- (d) 20
- (e) 40

**Q72.**  $40\% \text{ of } 825 = 16 \frac{2}{3}\% \text{ of } 1260 + ?$

- (a) 120
- (b) 140
- (c) 160
- (d) 100
- (e) 180

**Q73.**  $18 \div 1.5 + 153 \div 17 + \sqrt{256} = \frac{629}{?}$

- (a) 9
- (b) 19
- (c) 27
- (d) 7
- (e) 17

**Q74.**  $(110 + 70 - \sqrt{6400}) \div 25 + ? = (4)^2$

- (a) 24
- (b) 14
- (c) 12
- (d) 22
- (e) None of the above.

**Q75.**  $\frac{25\% \text{ of } 680}{50\% \text{ of } 340} = ?$

- (a) 5
- (b) 4
- (c) 3
- (d) 2
- (e) 1

**Q76.**  $15\% \text{ of } 60 \text{ of } 36000 = 12 \times ?^3$

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(a) 25  
 (b) 40  
 (c) 10  
 (d) 20  
 (e) 30

**Q77.**  $\frac{170}{34} \div \frac{25}{5} \div \frac{742}{2226} = ?$

(a) 7  
 (b) 5  
 (c) 4  
 (d) 2  
 (e) 3

**Q78.**  $\frac{4}{10.5} \times \sqrt{441} - \sqrt{25} = \sqrt{?}$

(a) 81  
 (b) 9  
 (c) 1  
 (d) 25  
 (e) 49

**Q79.** 12.5% of 400 = ? – 60% of 1800

(a) 1150  
 (b) 1160  
 (c) 1170  
 (d) 1190  
 (e) 1130

**Q80.**  $((36)^{1/2} + (169)^{1/2}) \times ? = 95$

(a) 5  
 (b) 4  
 (c) 3  
 (d) 2  
 (e) 1



## Solutions

**S1. Ans. (d)**

**S2. Ans. (a)**

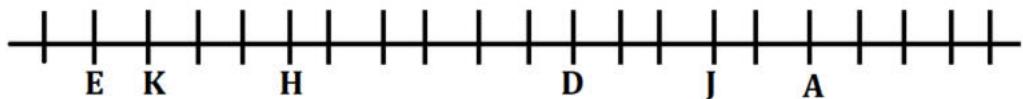
**S3. Ans. (b)**

**S4. Ans. (d)**

**S5. Ans. (a)**

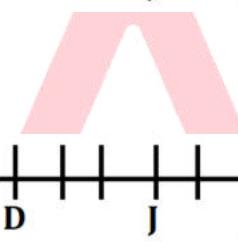
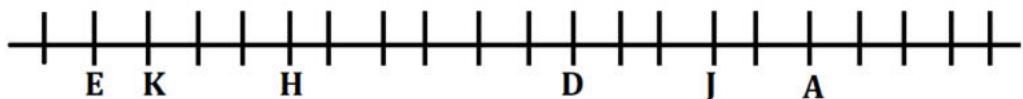
**S6. Ans. (c)**

**Sol.**



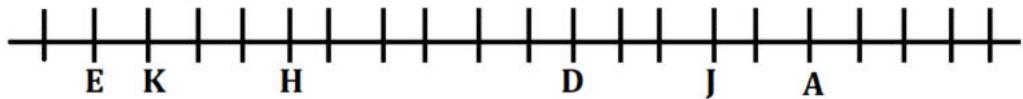
**S7. Ans. (d)**

**Sol.**



**S8. Ans. (e)**

**Sol.**



**S9. Ans. (b)**

**Sol.**

I. R > W (False)

II. K < G (True)



**S10. Ans. (d)**

**Sol.**

I. P < O (True)

II. O ≥ B (True)

**S11. Ans. (e)**

**Sol.**

I. P > L (False)

II. N < R (False)

**S12. Ans. (a)**

**Sol.**

I. X > B (True)

II. Z ≤ E (False)

S13. Ans. (e)

Sol.

$$\begin{array}{l}
 C (-) - B (-) = D (+) \\
 | \\
 H (+) = G (-) \\
 | \\
 E (-) - A (+)
 \end{array}$$

S14. Ans. (a)

Sol.

$$\begin{array}{l}
 C (-) - B (-) = D (+) \\
 | \\
 H (+) = G (-) \\
 | \\
 E (-) - A (+)
 \end{array}$$

S15. Ans. (c)

Sol.

$$\begin{array}{l}
 C (-) - B (-) = D (+) \\
 | \\
 H (+) = G (-) \\
 | \\
 E (-) - A (+)
 \end{array}$$

S16. Ans. (a)

Sol.

5693728

9876532

S17. Ans. (a)

Sol.

Boxes
B
A
E
C
D
G
F

**S18. Ans. (b)****Sol.**

Boxes
B
A
E
C
D
G
F

**S19. Ans. (e)****Sol.**

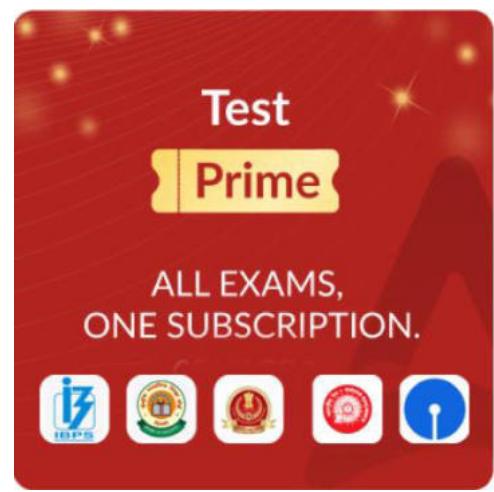
Boxes
B
A
E
C
D
G
F

**S20. Ans. (c)****Sol.**

Boxes
B
A
E
C
D
G
F

**S21. Ans. (c)****Sol.**

Boxes
B
A
E
C
D
G
F



**S22. Ans. (c)**

**Sol.**

Before: 492 625 381 967 154

After: 294 **526** 183 769 451

**S23. Ans. (c)**

**Sol.**

Before: 492 625 381 967 154

After: 249 **256** 138 **679** 145

$$679+256 = 935$$

**S24. Ans. (d)**

**Sol.**

492 625 381 967 154

$$8+6 = 14$$

**S25. Ans. (d)**

**Sol.**

Before: 492 625 381 967 154

After: 494 **627** 383 **969** **156**

**S26. Ans. (b)**

**Sol.**

Months	Persons
March	G
April	E
May	C
June	F
July	B
August	D
September	A

**S27. Ans. (a)**

**Sol.**

Months	Persons
March	G
April	E
May	C
June	F
July	B
August	D
September	A

**S28. Ans. (d)**

**Sol.**

Months	Persons
March	G
April	E
May	C
June	F
July	B
August	D
September	A

**S29. Ans. (e)**

**Sol.**

Months	Persons
March	G
April	E
May	C
June	F
July	B
August	D
September	A

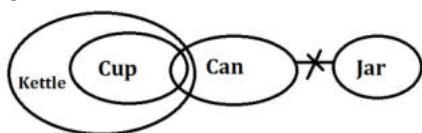
**S30. Ans. (b)**

**Sol.**

Months	Persons
March	G
April	E
May	C
June	F
July	B
August	D
September	A

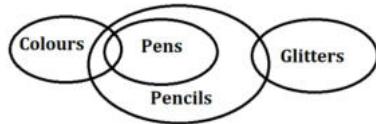
**S31. Ans. (a)**

**Sol.**



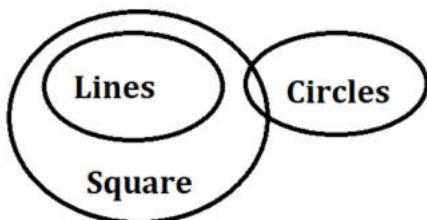
**S32. Ans. (b)**

**Sol.**



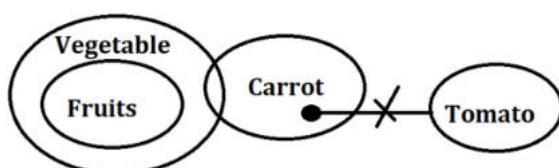
S33. Ans. (e)

Sol.



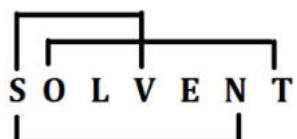
S34. Ans. (b)

Sol.



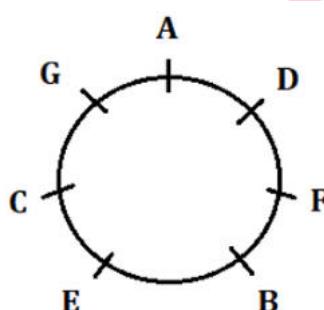
S35. Ans. (d)

Sol.



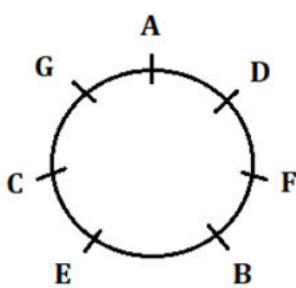
S36. Ans. (d)

Sol.



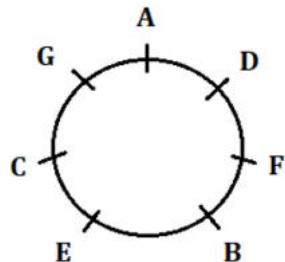
S37. Ans. (a)

Sol.



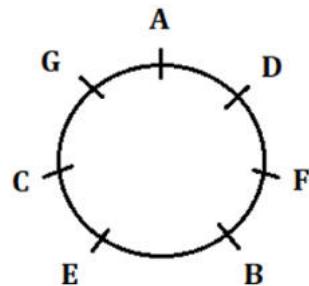
**S38. Ans. (e)**

**Sol.**



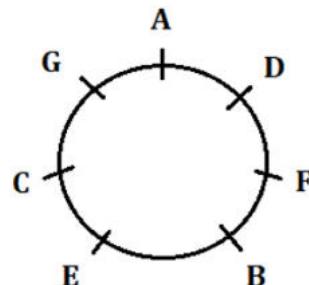
**S39. Ans. (c)**

**Sol.**



**S40. Ans. (b)**

**Sol.**



**S41. Ans. (d)**

**Sol.** Required answer =  $120+100 : 110 = 220 : 110 = 2:1$

**S42. Ans. (a)**

**Sol.** Required answer =  $\frac{100+80}{200} \times 100 = 90\%$

**S43. Ans. (b)**

**Sol.** Total marks obtained by A =  $120+100+130+80+130+90 = 650$

Required answer =  $\frac{3}{3+6+4} \times 650 = 150$

**S44. Ans. (c)**

**Sol.** Required answer =  $\frac{100+132+130+150+80}{5} = 118.4$

**S45. Ans. (d)**

**Sol.** Required answer =  $(130+150) - (100 + 40) = 140$

**S46. Ans. (c)**

**Sol.** Required answer =  $(50+125+200+150+100)-(25+100+150+50+200) = 625-525 = 100$

**S47. Ans. (e)**

**Sol.** Required answer =  $125+50 : 200 = 175:200 = 7:8$

**S48. Ans. (a)**

**Sol.**

Online classes taken on Saturday = 80% of 25 = 20

Required answer =  $20 + 100 = 120$

**S49. Ans. (c)**

**Sol.** Required answer =  $\frac{50+100}{150} \times 100 = 100\%$

**S50. Ans. (a)**

**Sol.**

Online classes taken by students on Sunday =  $\frac{4}{5} \times 100 = 80$

Required answer =  $\frac{100-80}{100} \times 100 = 20\%$

**S51. Ans (b)**

**Sol. Information Given in the Question:**

Total mixture = 42 liters

Initial ratio of milk : water = 2 : 5

After adding some milk, water : milk = 1 : 4

Find the quantity of milk added.

**Detailed Explanation:**

**Initial quantities of milk and water**

Ratio = 2 : 5

Total = 42 liters

Total parts =  $2 + 5 = 7$

Milk =  $(2/7) \times 42 = 12$  liters

Water =  $(5/7) \times 42 = 30$  liters

**Let milk added = x liters**

New milk =  $12 + x$  liters

Water = remains 30 liters

New ratio (Water : Milk) = 1 : 4

So,

$$\frac{30}{12+x} = \frac{1}{4}$$

$$4 \times 30 = 1 \times (12 + x)$$

$$120 = 12 + x$$

$$x = 108$$

### S52. Ans (b)

**Sol. Information Given in the Question:**

A + B can complete the work in 15 days

B alone can complete the work in 36 days

B leaves 6 days before the work is finished

**Concept/Formulas Used in the Question:**

Work = Total work = LCM of individual time (can assume total work = 180 units)

Work done = Efficiency × Time

Efficiency = Total work / Time taken

**Detailed Explanation:**

Let the total work = LCM(15, 36) = 180 units

Efficiency of A + B =  $180 / 15 = 12$  units/day

Efficiency of B =  $180 / 36 = 5$  units/day

So, Efficiency of A =  $12 - 5 = 7$  units/day

Let total time taken = T days

So, B works for  $(T - 6)$  days, and A works for full T days

Total work = Work done by A + Work done by B

$$\Rightarrow 7T + 5(T - 6) = 180$$

$$\Rightarrow 7T + 5T - 30 = 180$$

$$\Rightarrow 12T = 210$$

$$\Rightarrow T = 17.5 \text{ days}$$

### S53. Ans (a)

**Sol. Information Given in the Question:**

Breadth is 25% less than the length

Perimeter of rectangle = 70 cm

**Concept/Formulas Used in the Question:**

Perimeter of rectangle =  $2 \times (\text{Length} + \text{Breadth})$

Area of rectangle = Length × Breadth

**Detailed Explanation:**

Let the length of the rectangle be Lcm.

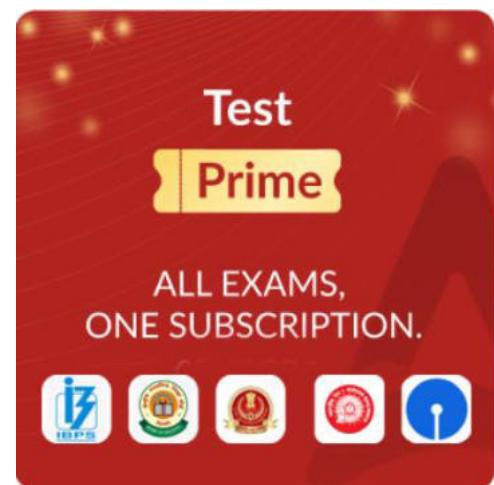
Then the breadth =  $0.75L$  cm

$$\text{Perimeter} = 2 \times (L + 0.75L)$$

$$= 2 \times 1.75L = 3.5L$$

$$\text{Given perimeter} = 70$$

So,



$$3.5L=70$$

$$L = \frac{70}{3.5} = 20 \text{ cm}$$

$$\text{Now, breadth} = 0.75 \times 20 = 15 \text{ cm}$$

$$\text{Area} = \text{Length} \times \text{Breadth} = 20 \times 15 = 300 \text{ cm}^2$$

#### S54. Ans (c)

##### Sol. Information Given in the Question:

Discount = 20% on Marked Price

Profit = Rs 450

Marked Price - Cost Price = Rs 1900

##### Concept/Formula Used in the Question:

Selling Price = Marked Price - Discount

Profit = Selling Price - Cost Price

Selling Price = Cost Price + Profit

Cost Price = Marked Price - 1900

##### Detailed Explanation:

Let the Cost Price (CP) be x

Then, Marked Price (MP) = x + 1900

Selling Price (SP) = MP - 20% of MP = 0.8 × (x + 1900)

Given: Profit = 450

SP = CP + 450

$$= x + 450$$

So,

$$0.8(x + 1900) = x + 450$$

$$0.8x + 1520 = x + 450$$

$$1520 - 450 = x - 0.8x$$

$$1070 = 0.2x$$

$$x = \frac{1070}{0.2} = 5350$$

#### S55. Ans (c)

##### Sol. Information Given in the Question:

A covers 54 km in 2 hours

Speed of A is 20% more than speed of B

Need to find distance travelled by B in 4 hours

##### Concept/Formula Used in the Question:

Speed = Distance / Time

$$A = 120\% \text{ of } B \rightarrow A = \frac{6}{5} \times B$$

Distance = Speed × Time

##### Detailed Explanation:

Speed of A =  $54 \div 2 = 27 \text{ km/h}$

Let speed of B = x

$$\text{Given: } \frac{6}{5} \times x = 27$$

$$x = \frac{27 \times 5}{6} = \frac{135}{6} = 22.5 \text{ km/h}$$

Distance travelled by B in 4 hours =  $22.5 \times 4 = 90 \text{ km}$

### S56. Ans (e)

#### Sol. Information Given in the Question:

Upstream speed = 6 km/h

Speed of stream = 2 km/h

Distance to cover downstream = 80 km

#### Concept/Formula Used in the Question:

Upstream speed = Boat speed in still water - Stream speed

Downstream speed = Boat speed in still water + Stream speed

Time = Distance / Speed

#### Detailed Explanation:

Let speed of boat in still water = B

Given upstream speed = B - 2 = 6

B = 8 km/h

Then, downstream speed = B + 2 = 8 + 2 = 10 km/h

Time = 80 / 10 = 8 hours

### S57. Ans (d)

#### Sol. Information Given in the Question:

A invested Rs 2800 for 8 months

B invested Rs 5400 for 12 months

C invested Rs 3600 for 12 months

B's share of profit = Rs 2430

#### Concept/Formula Used in the Question:

Profit Share  $\propto$  Investment  $\times$  Time

Total Profit  $\times$  (B's Share Ratio) = Rs 2430

#### Detailed Explanation:

Effective investments:

A:  $2800 \times 8 = 22400$

B:  $5400 \times 12 = 64800$

C:  $3600 \times 12 = 43200$

Total ratio = A : B : C = 22400 : 64800 : 43200

= 28 : 81 : 54

Total ratio sum =  $28 + 81 + 54 = 163$  parts

B's share = 81 parts = Rs 2430

So,

Total Profit =  $\frac{2430 \times 163}{81} = 4890$  Rs

### S58. Ans (e)

#### Sol. Information Given in the Question:

Compound Interest Rate = 10% p.a., Time = 3 years, CI = Rs 1324

Simple Interest Rate = 15% p.a., Time = 2 years, Principal = (X + 500)

#### Concept/Formula Used in the Question:

**Compound Interest:**

$$A = P \left(1 + \frac{R}{100}\right)^T$$

Compound Interest = Amount – Principal

$$\text{Simple Interest} = \frac{P \times R \times T}{100}$$

A = Amount

P = Principal

R = Rate of interest

T = Time period

**Detailed Explanation:**

Amount after 3 years at 10% CI =  $X \times (1.1)^3 = X \times 1.331$

$$1324 = X \times 1.331 - X$$

$$1324 = 0.331X$$

$$X = \frac{1324}{0.331}$$

$$X = 4000$$

So, second investment =  $X + 500$

$$= 4000 + 500 = 4500 \text{ Rs}$$

$$\text{Simple Interest} = \frac{4500 \times 15 \times 2}{100} = 1350 \text{ Rs}$$

**S59. Ans (a)**

**Sol. Information Given in the Question:**

Pipe A fills tank in 15 hours

Pipe B fills tank in 20 hours

Both opened together for 4 hours, then only B continues

**Concept/Formula Used in the Question:**

Work done = (Rate × Time)

Total work = tank capacity

Remaining work = Total - Work done in first 4 hours

Time = Remaining work / B's rate

**Detailed Explanation Using LCM Method:**

Let total capacity of the tank (LCM of 15 and 20) = 60 units

A's efficiency =  $60 \div 15 = 4$  units/hour

B's efficiency =  $60 \div 20 = 3$  units/hour

**Work done in first 4 hours by A and B together:**

Total work =  $(4 + 3) \times 4 = 7 \times 4 = 28$  units

**Remaining work = 60 - 28 = 32 units**

B alone fills 3 units/hour

Time to fill 32 units =  $32 \div 3 = 10 \frac{2}{3}$  hours

Total time = 4 (with A & B) +  $10 \frac{2}{3} = 14 \frac{2}{3}$  hours

### S60. Ans (b)

**Sol. Information Given in the Question:**

Length of Train A = 180 m

Length of Train B = 120 m

Speed of Train A = 54 km/h

Speed of Train B = 72 km/h

Direction = Opposite

**Concept/Formula Used in the Question:**

When two objects move in opposite directions, relative speed = sum of individual speeds

Convert km/h to m/s → multiply by  $5/18$

Time = Total Distance / Relative Speed

Total Distance = Sum of lengths of both trains

**Detailed Explanation:**

**Convert speeds to m/s**

$54 \text{ km/h} = 54 \times 5/18 = 15 \text{ m/s}$

$72 \text{ km/h} = 72 \times 5/18 = 20 \text{ m/s}$

Relative speed =  $15 + 20 = 35 \text{ m/s}$

Total distance to be covered =  $180 + 120 = 300 \text{ m}$

Time = Distance / Speed =  $300/35 = \frac{60}{7}$  seconds

### S61. Ans. (b)

**Sol. Pattern of series -**

$2 \times 2 = 4$

$4 \times 3 = 12$

$12 \times 4 = 48$

$48 \times 5 = 240$

$240 \times 6 = 1440$

### S62. Ans. (b)

**Sol. Pattern of series -**

$1200 \times 1/4 = 300$

$300 \times 2/4 = 150$

$150 \times 3/4 = 112.5$

$112.5 \times 4/4 = 112.5$

$112.5 \times 5/4 = 140.625$

### S63. Ans. (e)

**Sol.**

Pattern of series -

$1600 - 8^3 = 1088$

$1088 - 7^2 = 1039$

$1039 - 6^3 = 823$

$823 - 5^2 = 798$

$798 - 4^3 = 734$

**S64. Ans. (a)**

**Sol.** Pattern of series –

Subtraction of consecutive prime number

$$147 - 17 = 130$$

$$130 - 19 = 111$$

$$111 - 23 = 88$$

$$88 - 29 = 59$$

$$59 - 31 = 28$$

**S65. Ans (a)**

**Sol.** Pattern of series –

$$\begin{array}{cccccccc}
 148 & 172 & 203 & 243 & 294 & 358 & 437 \\
 +24 & +31 & +40 & +51 & +64 & +79 & \\
 \hline
 +7 & +9 & +11 & +13 & +15 & +15 &
 \end{array}$$

**S66. Ans. (b)**

**Sol.**

$$50 - 45 + 145 = 2.5 \times ?$$

$$150 = 2.5 \times ?$$

$$60 = ?$$

**S67. Ans. (b)**

**Sol.**

$$\sqrt{225} \div \sqrt{25} \times 6 = ?\% \text{ of } 200$$

$$\frac{15 \times 6}{5 \times 2} = ?$$

$$? = 9$$

**S68. Ans. (c)**

**Sol.**

$$16 \times 25 + 280 - (25)^2 = 25\% \text{ of } ?$$

$$(400 + 280 - 625) \times \frac{100}{25} = ?$$

$$(680 - 625) \times 4 = ?$$

$$55 \times 4 = ?$$

$$? = 220$$

**S69. Ans. (e)**

**Sol.**

$$\sqrt{49} \times \sqrt{196} + 430 = (?)^2 - 48$$

$$7 \times 14 + 430 + 48 = (?)^2$$

$$576 = (?)^2$$

$$? = 24$$

**S70. Ans. (a)**

**Sol.**

$$118 + \sqrt{484} + \frac{6}{13} \times 260 + ? = (17)^2$$

$$118 + 22 + 6 \times 20 + ? = 289$$

$$? = 289 - 140 - 120$$

$$? = 29$$

**S71. Ans. (d)**

**Sol.**

$$108 \div 3 \times 5 - 225 \div 9 \times 4 = 400\% \text{ of } ?$$

$$\frac{108}{3} \times 5 - \frac{225}{9} \times 4 = \frac{400}{100} \times ?$$

$$180 - 100 = 4 \times ?$$

$$? = \frac{80}{4}$$

$$? = 20$$

**S72. Ans. (a)**

**Sol.**

$$40\% \text{ of } 825 = 16 \frac{2}{3}\% \text{ of } 1260 + ?$$

$$\frac{40}{100} \times 825 = \frac{1}{6} \times 1260 + ?$$

$$330 = 210 + ?$$

$$? = 120$$

**S73. Ans. (e)**

**Sol.**

$$18 \times \frac{3}{2} + \frac{153}{17} + 16 = \frac{629}{?}$$

$$12 + 9 + 16 = \frac{629}{?}$$

$$? = \frac{629}{37}$$

$$? = 17$$

**S74. Ans. (c)**

**Sol.**

$$(110 + 70 - \sqrt{6400}) \div 25 + ? = (4)^2$$

$$\frac{110+70-80}{25} + ? = 16$$

$$? = 16 - \frac{100}{25}$$

$$? = 16 - 4$$

$$? = 12$$

**S75. Ans. (e)**

**Sol.**

$$\frac{25 \times 680}{50 \times 340} = ?$$

$$1 = ?$$

**S76. Ans. (e)**

**Sol.**

$$\frac{15 \times 60 \times 36000}{12 \times 100} = ?^3$$

$$27000 = ?^3$$

$$30 = ?$$

**S77. Ans. (e)**

**Sol.**

$$\frac{170}{34} \times \frac{5}{25} \times \frac{2226}{742} = ?$$

$$\frac{34}{34} \times \frac{2226}{742} = ?$$

$$3 = ?$$

**S78. Ans. (b)**

**Sol.**

$$\frac{4}{10.5} \times \sqrt{441} - \sqrt{25} = \sqrt{?}$$

$$8 - 5 = \sqrt{?}$$

$$3 = \sqrt{?}$$

$$9 = ?$$

**S79. Ans. (e)**

**Sol.**

$$50 = ? - 1080$$

$$1130 = ?$$

**S80. Ans. (a)**

**Sol.**

$$(6+13) \times ? = 95$$

$$5 = ?$$

