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 11th 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 ≤ N ≤ O = P > Q ≤ 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 ≥ Y > Z = A > B < C > D = E
Conclusions:
I. X > B
II. Z ≤ 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?

(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

(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

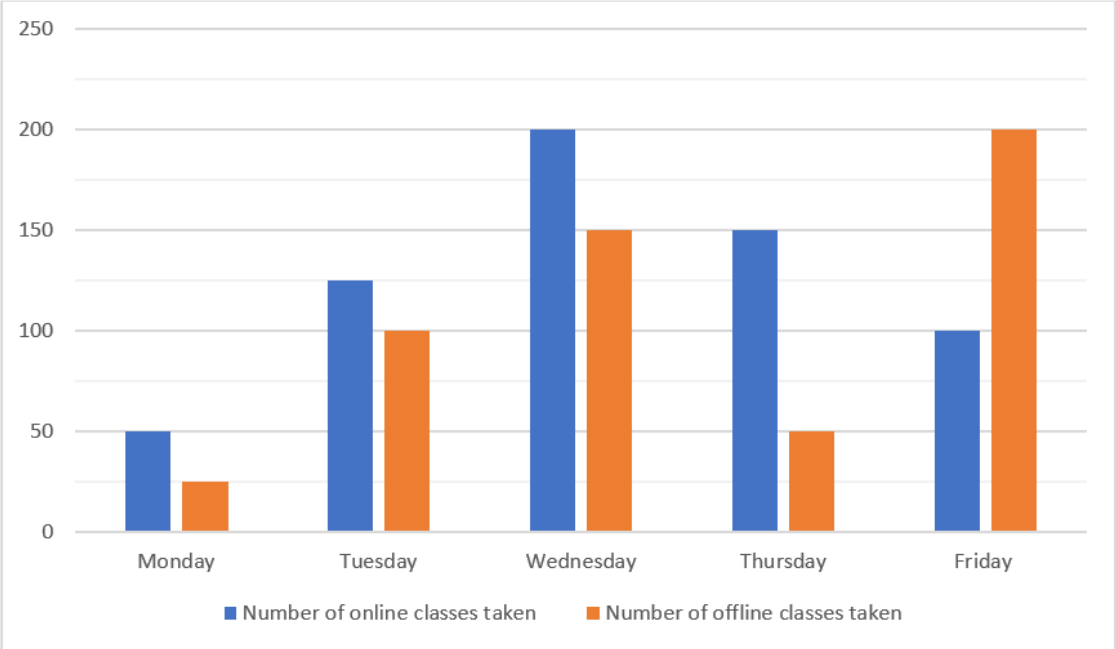
Q42. The total marks scored by P and T in Hindi is what percentage of marks scored by S in English and in Hindi together.
(a) 90%
(b) 33%
(c) 66%
(d) 76%
(e) 75%

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 cm^2).

(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

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

Q67. $\sqrt{225} \div \sqrt{25} \times 6 = ?\%$ of 200
(a) 6
(b) 9
(c) 12
(d) 4
(e) 15

Q68. $16 \times 25 + 280 - (25)^2 = 25\%$ 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÷3×5-225÷9×4=400% 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% of 60 of 36000 = 12×?^{3}

(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

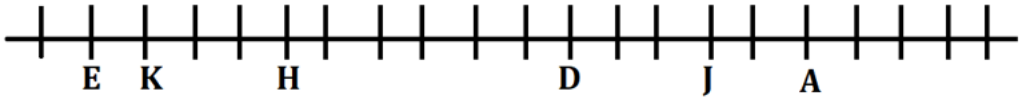
Q79. 12.5% of 400 = ? – 60% of 1800
(a) 1150
(b) 1160
(c) 1170
(d) 1190
(e) 1130

Q80. $((36)^{1/2} + (169)^{1/2}) \times ? = 95$
(a) 5
(b) 4
(c) 3
(d) 2
(e) 1

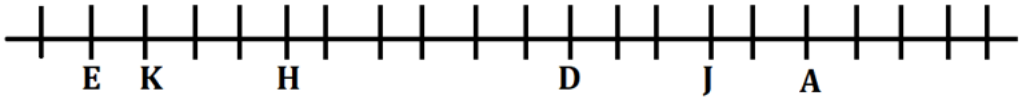
Solutions

S1. Ans. (d)
S2. Ans. (a)
S3. Ans. (b)
S4. Ans. (d)
S5. Ans. (a)

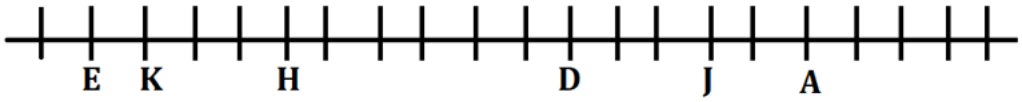
S6. Ans. (c)
Sol.



S7. Ans. (d)
Sol.



S8. Ans. (e)
Sol.



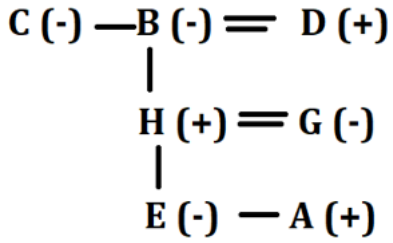
S9. Ans. (b)
Sol.
I. R > W (False)
II. K < G (True)

S10. Ans. (d)
Sol.
I. P < O (True)
II. O ≥ B (True)

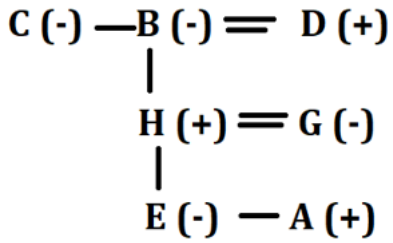
S11. Ans. (e)
Sol.
I. P > L (False)
II. N < R (False)

S12. Ans. (a)
Sol.
I. X > B (True)
II. Z ≤ E (False)

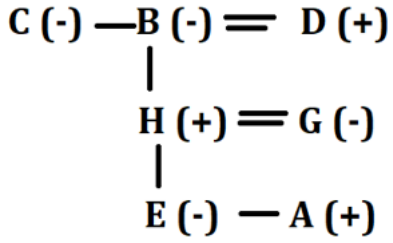
S13. Ans. (e)
Sol.



S14. Ans. (a)
Sol.



S15. Ans. (c)
Sol.



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 3**8**1 9**6**7 154
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

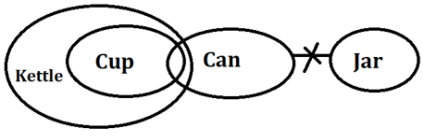
S29. Ans. (e)
Sol.

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

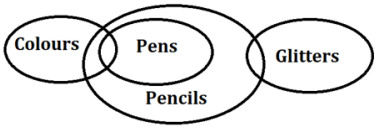
S30. Ans. (b)
Sol.

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

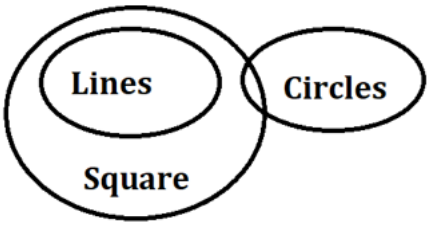
S31. Ans. (a)
Sol.



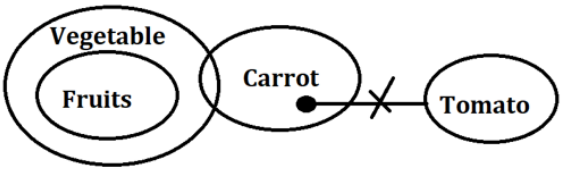
S32. Ans. (b)
Sol.



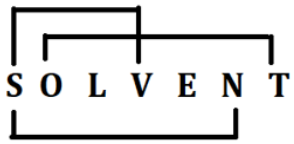
S33. Ans. (e)
Sol.



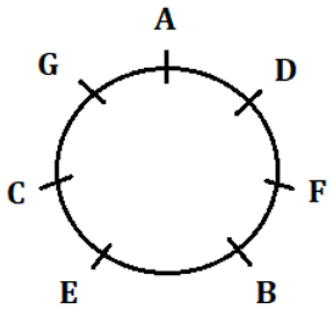
S34. Ans. (b)
Sol.



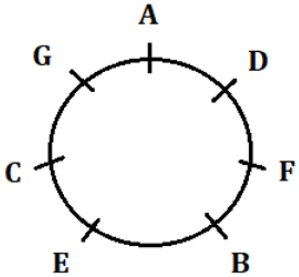
S35. Ans. (d)
Sol.



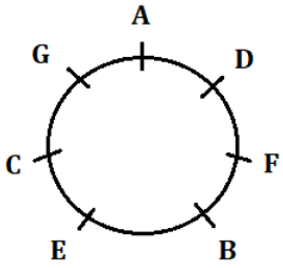
S36. Ans. (d)
Sol.



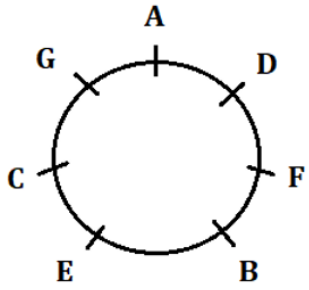
S37. Ans. (a)
Sol.



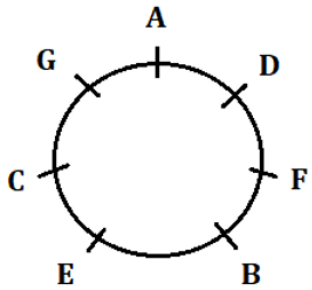
S38. Ans. (e)
Sol.



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) × 42 = 12 liters

Water = (5/7) × 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 × 30 = 1 × (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/Formula 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

⇒ 7T + 5(T – 6) = 180

⇒ 7T + 5T – 30 = 180

⇒ 12T = 210

⇒ T = 17.5 days

S53. Ans (a)

Sol. Information Given in the Question:

Breadth is 25% less than the length

Perimeter of rectangle = 70 cm

Concept/Formula Used in the Question:

Perimeter of rectangle = 2 × (Length + Breadth)

Area of rectangle = Length × Breadth

Detailed Explanation:

Let the length of the rectangle be Lcm.

Then the breadth = 0.75Lcm

Perimeter = 2×(L+0.75L)

= 2×1.75L = 3.5L

Given perimeter = 70

So,

3.5L=70

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

Now, breadth = 0.75×20=15cm

Area = Length × Breadth = 20×15=300cm^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

Seling 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% of B → A = $\frac{6}{5}$×B

Distance = Speed × Time

Detailed Explanation:

Speed of A = 54 ÷ 2 = 27km/h

Let speed of B = x

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 × 4 = 90 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 ∝ Investment × Time
Total Profit × (B's Share Ratio) = Rs 2430
Detailed Explanation:
Effective investments:
A: 2800 × 8 = 22400
B: 5400 × 12 = 64800
C: 3600 × 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,
$\text{Total Profit} = \frac{2430 \times 163}{81} = 4890 \text{ Rs}$

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:

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

Compound Interest = Amount – Principal

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×1.331 - X

1324=0.331X

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

$X = 4000$

So, second investment = $X + 500$

$= 4000 + 500 = 4500$ Rs

Simple Interest = $\frac{4500 \times 15 \times 2}{100} = 1350$ 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 ÷ 15 = 4 units/hour

B's efficiency = 60 ÷ 20 = 3 units/hour

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

Total work = (4 + 3) × 4 = 7 × 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 km/h = 54×5/18=15m/s
72 km/h = 72×5/18=20m/s
Relative speed = 15 + 20 = 35 m/s
Total distance to be covered = 180 + 120 = 300 m
Time = Distance / Speed = $300/35 = \frac{60}{7}$ seconds

S61. Ans. (b)
Sol. Pattern of series -
2×2=4
4×3=12
12×4=**48**
48×5=240
240×6=1440

S62. Ans. (b)
Sol. Pattern of series –
1200 ×1/4=300
300 ×2/4=150
150 ×3/4=112.5
112.5 ×4/4=**112.5**
112.5 ×5/4=140.625

S63. Ans. (e)
Sol.
Pattern of series –
$1600 - 8^3 = 1088$
$1088 - 7^2 = 1039$
$1039 - 6^3 = 823$
$823 - 5^2 = 798$
$798 - 4^3 = \mathbf{734}$

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 –

148 (+24) **172** (+31, +7) 203 (+40, +9) 243 (+51, +11) 294 (+64, +13) 358 (+79, +15) 437

S66. Ans. (b)
Sol.
50 – 45 +145 = 2.5× ?
150 = 2.5× ?
60 = ?

S67. Ans. (b)
Sol.
$\sqrt{225} \div \sqrt{25} \times 6 = ?\%$ of 200
$\frac{15\times6}{5\times2} = ?$
? = 9

S68. Ans. (c)
Sol.
$16 \times 25 + 280 - (25)^2 = 25\%$ 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.

$108 \div 3 \times 5 - 225 \div 9 \times 4 = 400\% \ of \ ?$
$\frac{108}{3} \times 5 - \frac{225}{9} \times 4 = \frac{400}{100} \times ?$
$180 - 100 = 4 \times ?$
$? = \frac{80}{4}$
$? = 20$

S72. Ans. (a)
Sol.

40% of $825 = 16\frac{2}{3}\%$ 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.
$\frac{15\times60\times36000}{12\times100} = ?^3$
$27000 = ?^3$
$30 = ?$

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.
$(6+13) \times ? = 95$
$5 = ?$