IBPS RRB PO Pre 2025 Memory Based Paper
Based on 23rd November 1st Shift

Directions (1-5): Study the following information carefully and answer the questions given below.

Eight persons - L, M, N, O, P, Q, R and S are sitting around a circular table such that some of them are facing inside while some are facing outside the table (but not necessarily in the same order). Not more than two adjacent persons face the same direction.

O sits second to the right of P where both are facing opposite directions. P sits opposite to R who sits second to the left of Q. Only two persons sit between L and Q when counted from the right of Q. Both L and R face the same direction. S faces inside. Only three persons sit between L and N who sits second to the right of S. Both M and S face opposite directions. The number of persons facing outside is two more than the number of persons facing inside. N doesn't face outside.

Q1. What is the position of M with respect to S?

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

Q2. Which among the following pair of persons sit adjacent to S?

(a) N and M
(b) O and R
(c) P and Q
(d) N and P
(e) Q and L

Q3. Four of the following five are alike in a certain way as per the given arrangement and thus form a group. Find the one that doesn't belong to that group?

(a) OP
(b) QS
(c) LN
(d) MS
(e) PL

Q4. Who among the following person sits third to the left of R?

(a) S
(b) The one who sits immediate left of M
(c) L
(d) The one who sits second to the right of Q
(e) None of these

Q5. If all the persons are made to sit in the alphabetical order in a clockwise direction from L, then how many persons remain unchanged in their position (Including L)?
(a) One
(b) Two
(c) Three
(d) More than three
(e) None

Directions (6-9): In the question below, some statements are given followed by some conclusions. You have to take the given statements to be true even if they seem to be at variance from 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.

Q6. Statement: Only a few Sumo is Dancing
All Dancing is Surfing
All Sumo is Game
Conclusion: I. No Sumo is Surfing
II. Some Surfing is Game
(a) If only II follows
(b) If only I follows
(c) If neither I nor II follows
(d) If either I or II follows
(e) If both I and II follow

Q7. Statement: Only a few Run is Drive
All Drive is Lift
All Lift is Climb
Conclusion: I. All Drive is Climb
II. Some Lift being Run is a possibility
(a) If only II follows
(b) If only I follows
(c) If neither I nor II follows
(d) If either I or II follows
(e) If both I and II follow

Q8. Statement: Only a few Wolf is Waste
Some Waste is Skill
All Skill is Price
Conclusion: I. Some Price is Wolf
II. No Wolf is Skill
(a) If only II follows
(b) If only I follows
(c) If neither I nor II follows
(d) If either I or II follows
(e) If both I and II follow

Q9. Statement: Only a few Ram is Yashi
No Yashi is Narendra
Some Narendra is Kavita
Conclusion: I. All Ram can be Narendra
II. No Yashi is Kavita
(a) If only II follows
(b) If only I follows
(c) If neither I nor II follows
(d) If either I or II follows
(e) If both I and II follow

Directions (10-13): Study the following information carefully and answer the below questions.
Nine persons viz. R, S, T, U, V, W, X, Y and Z are working in a company at different designations (but not necessarily in the same order) such as CMD, CEO, COO, CFO, MD, Senior Manager (SM), Assistant manager (AM), Clerk and Peon.
Note: The designations are given in decreasing order such that CMD is the senior-most designation and Peon is the junior-most designation.
U is senior to CFO but not designated as CEO. Only two persons are designated between U and Z. The number of persons junior to Z is same as the number of persons senior to S. V is immediately senior to Y who is neither CEO nor COO. Y is senior to R. Only four persons are designated between V and W. T is senior to W.

Q10. How many persons are designated between T and V?
(a) Two
(b) Four
(c) Three
(d) More than four
(e) None of these

Q11. If all the persons are designated in alphabetical order from senior-most to junior-most designation, then what will be the designation of X?
(a) MD
(b) AM
(c) COO
(d) CFO
(e) None of these

Q12. Who among the following person is two persons senior to Z?
(a) The one who is CEO
(b) X
(c) Y
(d) The one who is CFO
(e) V

Q13. Which of the following statements is/are not true with respect to the final arrangement?
(a) Z is senior to Y
(b) Two persons are designated between W and X
(c) U is the COO of the company
(d) V is three persons junior to X
(e) All are true

Q14. If in the number "386945275" all digits are arranged in descending order then what is the difference between the 3rd digit from left end and 1st digit from the right end?
(a) 2
(b) 1
(c) 5
(d) 4
(e) None of these

Directions (15-18): In the given question, the relationship between different elements is shown in the statements followed by some conclusions. Find the conclusion which is definitely true.

Q15. Statement: A > G > C < T < E= F > O
Conclusion: I. E>O
II. G< T
(a) Only I is true
(b) Only II is true
(c) Both I and II are true
(d) Either I or II is true
(e) Neither I nor II is true

Q16. Statement: H > K = U < R < E > W
Conclusion: I. H > R
II. W < U
(a) Only I is true
(b) Only II is true
(c) Both I and II are true
(d) Either I or II is true
(e) Neither I nor II is true

Q17. Statement: Y > J = D > I > S > Q
Conclusion: I. J > Q
II. I > Y
(a) Only I is true
(b) Only II is true
(c) Both I and II are true
(d) Either I or II is true
(e) Neither I nor II is true

Q18. Statement: B < S > I > K > Y < E
Conclusion: I. K > B
II. I > Y
(a) Only I is true
(b) Only II is true
(c) Both I and II are true
(d) Either I or II is true
(e) Neither I nor II is true

Directions (19-21): Study the following information carefully and answer the questions given below:
A certain number of persons sit in a row such that all of them face north direction. S sits third from one of the ends. Three persons sit between S and V. R sits exactly between S and V. As many persons sit between R and V is same as between V and Q. Q sits to the right of V. Q sits fifth to the right of U. Two persons sit between U and N. The number of persons sit to the left of S is one less than the number of persons sit to the right of J. R sits adjacent to J.

Q19. How many persons sit in the row?
(a) 10
(b) 11
(c) 7
(d) 8
(e) 9

Q20. Four among the following five pairs are alike in a certain manner and related to a group, which among the following does not belong to the group?
(a) S-R
(b) R-Q
(c) U-J
(d) R-V
(e) V-Q

Q21. Which of the following statement is/are true?
I. More than three persons sit to the right of U
II. S sits to the left of Q
III. Odd number of persons sit between V and N
(a) Both I and II are true
(b) Only III is true
(c) Both II and III are true
(d) Both I and III are true
(e) All are true

Q22. How many such pair of letters are there in the word '**SEASONING**', each of which have as many letters between them as they have in English alphabet (both in forward and backward direction)?
(a) One
(b) Four
(c) Two
(d) Five
(e) Three

Directions (23-27): Study the following information carefully and answer the questions given below:
Seven persons- M, N, O, P, Q, R and S live on the seven-floor building such that the bottommost floor is numbered as 1, floor just above it is numbered as 2 and so on till the topmost floor is numbered as 7.
S lives two floors below Q on a prime numbered floor. Two persons live between S and N. The number of persons lives above N is same as the number of persons lives below O. M lives immediately above R.
P doesn't live on the adjacent floor of N.

Q23. How many floors gap is between M and O?
(a) Two
(b) Three
(c) One
(d) Four
(e) Five

Q24. Which among the following statement(s) is/are true?
I. M lives on the topmost floor
II. O lives above P
III. Q lives on the adjacent floor of R
(a) Both I and II
(b) Only II
(c) Both II and III
(d) Only III
(e) All I, II and III

Q25. Who among the following lives on the 6th floor?
(a) S
(b) P
(c) R
(d) None of these
(e) O

Q26. If all the persons live in alphabetical order from bottom to top, then the position of how many persons remains unchanged?
(a) None
(b) One
(c) Three
(d) More than three
(e) Two

Q27. The number of persons live between M and N is same as the number of persons live between __ and ___.
(a) P, Q
(b) R, S
(c) P, R
(d) Q, S
(e) None of these

Directions (28-30): Study the following information carefully and answer the questions given below:
Seven books are kept at different distances at different directions with respect to each other. Book M is 7m to the north of book T which is 4m to the east of book O. Book N is 8m to the south of book O and 10m to the west of book P. Book Q is 3m to the west of book R and 10m to the north of book P. Book S is 15m to the south of book R.

Q28. What is the shortest distance between book P and book S?
(a) $2\sqrt{3}$m
(b) 90m
(c) $3\sqrt{10}$m
(d) $\sqrt{34}$m
(e) 113m

Q29. In which direction is book M with respect to book R?
(a) North-west
(b) South-east
(c) South
(d) North-east
(e) West

Q30. Four of the following five are alike in a certain way and thus form a group. Which among the following does not belong to the group?
(a) N-T
(b) O-M
(c) P-R
(d) S-P
(e) T-Q

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

Nine persons buys product one after another. Only two persons buy product after D. One person buys product between D and C. F buys product three persons before C. Number of persons buy products before C is one less than the number of persons buy products after H. Two persons buy product between H and A. J buys product immediately before E. B buys product before G.

Q31. How many persons buys product before H?

(a) Three
(b) Four
(c) Five
(d) Two
(e) Six

Q32. Who among the following buy the product four persons after A?

(a) G
(b) H
(c) C
(d) J
(e) D

Q33. Which among the following statement is/are true?

(a) More than three persons buy the product after J
(b) No one buys the product between H and A
(c) E buys the product before C
(d) A buys the products before F
(e) None is true

Q34. If all the persons buy product in alphabetical order from top to bottom, then the position of how many persons remains unchanged?

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

Q35. If A is related to H in a certain way, similarly F is related to C then find who among the following is related to D?

(a) J
(b) E
(c) H
(d) C
(e) B

Directions (36-38): Study the following information carefully and answer the questions given below:

T is son-in-law of A who is the sister-in-law of W. W is unmarried. V is niece of S who is unmarried child of M. M is sibling of W. A has only two children. J is parent of V. Number of male members are more than the female members.

Q36. How A is related to V?

(a) Grandmother
(b) Niece
(c) Sister
(d) Mother
(e) Sister-in-law

Q37. What is the ratio of male to female members in the family?

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

Q38. If G is married to S, then how is G related to A?

(a) Daughter-in-law
(b) Mother
(c) Father
(d) Son-in-law
(e) Brother

Q39. If we form a four-letter meaningful word by using the third, fifth, seventh and eighth letter from the left end of the word '**GRASSWOOD'**, then which of the following will be the fourth letter of the meaningful word thus formed. If more than one meaningful word is formed mark Z as your answer. If no meaningful word is formed, mark X as your answer?

(a) S
(b) A
(c) O
(d) X
(e) Z

Q40. Find the odd one out?

(a) RUQ
(b) DGC
(c) ORP
(d) WZV
(e) CFB

Directions (41-46): What will come in the place of question (?) mark in following number series:

Q41. 18, 22, 49, 65, 190, ?
(a) 232
(b) 226
(c) 230
(d) 218
(e) 214

Q42. ?, 219, 246, 283, 331, 391
(a) 201
(b) 210
(c) 205
(d) 224
(e) 219

Q43. 4.25, 17, 68, 272, ?, 4352
(a) 1332
(b) 1520
(c) 1144
(d) 1020
(e) 1088

Q44. 37, ?, 148, 296, 592, 1184
(a) 74
(b) 77
(c) 78
(d) 71
(e) 80

Q45. ?, 9, 27, 13.5, 40.5, 20.25
(a) 14
(b) 13
(c) 18
(d) 17
(e) 19

Q46. 113, 116, 111, 118, ?, 120
(a) 111
(b) 110
(c) 109
(d) 104
(e) 103

Directions (47-52): The table given below shows the total number of shirts and trousers manufactured, number of trousers sold and number of shirts sold by four shops.

Shops	Total items manufactured (shirt+ trouser)	Number of shirts sold	Number of trousers sold
A	330	100	150
B	245	45	160
C	450	250	120
D	500	325	75

Note – Number of items manufactured = items sold + items unsold
Total items = total number of shirts and trousers.

Q47. Find the average number of unsold items in shop A and in shop C.
(a) 80
(b) 81
(c) 90
(d) 91
(e) 100

Q48. If the 62% of the items manufactured by C are shirts, then find the unsold trousers in C is what percentage of total unsold items in shop D.
(a) 40
(b) 31
(c) 50
(d) 51
(e) 10

Q49. Find the ratio of shirts sold by A and C together to twice the total unsold items in D.
(a) 8:7
(b) 8:11
(c) 9:8
(d) 9:1
(e) 7:4

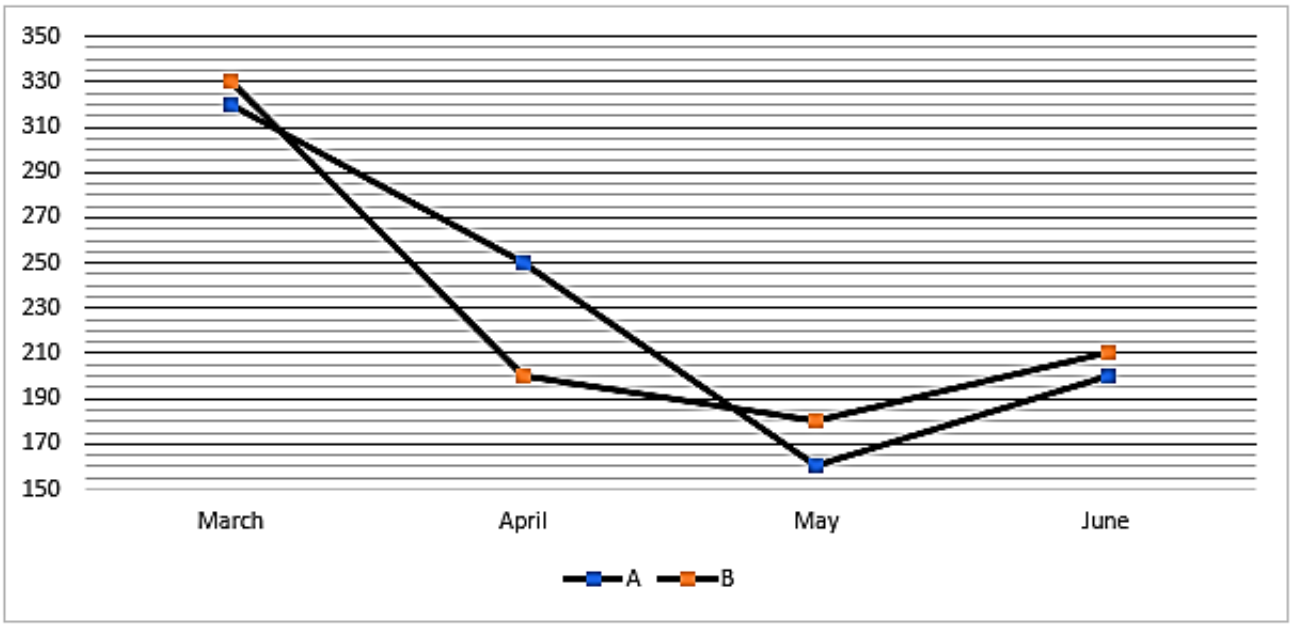
Q50. Find the difference between total sold items and total unsold items in all the shops.
(a) 925
(b) 981
(c) 890
(d) 991
(e) 910

Q51. If the cost of each shirt is Rs 24 and the cost of each trousers is 25% more than the shirts. Find the revenue generated by A from selling all the items.
(a) 6900
(b) 9681
(c) 6690
(d) 9000
(e) 6000

Q52. If the ratio of defective and non defective items manufactured by B is 1:4 and 20% of the items sold are defectives, find the difference between unsold defective items and sold non-defective items.

(a) 156
(b) 181
(c) 190
(d) 191
(e) 100

Directions (53-58): Read the following line graph carefully and answer the questions given below. The graph shows the number of items A and items B sold in four months.



Q53. If out of the total item B sold in march and April together, 50% are red, 25 are black, and the rest are green in colour, then find the number of green items B sold by in march and April together.

(a) 237
(b) 365
(c) 245
(d) 240
(e) 260

Q54. Find the difference between the total number of item A sold in April and may together and the number of items B sold in March.

(a) 80
(b) 95
(c) 90
(d) 94
(e) 35

Q55. Total number of item B sold in May is what percent more or less than that of in April?
(a) 10%
(b) 75%
(c) 60%
(d) 30%
(e) None of these

Q56. If the number of item A sold in July are 40% more than that of in May and out of which 3/4th are of defective items A. If in July sold defective item A in Rs.5, then find the total revenue collected in July selling all defective item A?
(a) Rs 420
(b) Rs 360
(c) Rs 850
(d) Rs 800
(e) Rs 840

Q57. Find the ratio of the total number of item A and B together sold in March to the total number of items A and B together sold in May.
(a) 4: 5
(b) 3: 5
(c) 5: 4
(d) 5: 3
(e) None of these

Q58. Find the total items A and B sold in the month of June is what percentage of items A sold in the month of April.
(a) 164%
(b) 175%
(c) 160%
(d) 130%
(e) 154%

Q59. The speed of a boat in still water is 20 km/hr and the ratio of downstream to upstream speed of the boat is 5 : 3 respectively. Find the time taken by the boat to cover 240 km downstream (in hours).
(a) 9.4
(b) 9.2
(c) 9.6
(d) 9.8
(e) 10.2

Q60. A vessel contains milk and water in the ratio 5 : 3, respectively. If 16 liters of the mixture are taken out and 4 liters of water are added, the ratio of milk to water becomes 3 : 2. Find the initial quantity of milk (in liters).

(a) 70
(b) 48
(c) 42
(d) 75
(e) 80

Q61. A and B together can complete a work in 20 days, and A alone can complete the same work in 30 days. If 40% of the work is completed by B in (Y + 5) days, then find the value of Y.

(a) 23
(b) 19
(c) 25
(d) 20
(e) 17

Q62. The ratio of the cost price to the selling price of an article is 4 : 5. The marked price of the article is Rs 8000, and it is sold after allowing a 20% discount. Find the profit (in Rs).

(a) 1800
(b) 1540
(c) 1340
(d) 1280
(e) 1420

Q63. A started a business with an investment of Rs 6000. After a few months, B joined the partnership with an investment of Rs 9000. At the end of the year, the total profit was Rs 4800, out of which B's share was Rs 1600. Find the time period (in months) for which B invested his money in the business.

(a) 8
(b) 3
(c) 6
(d) 5
(e) 4

Q64. Train X is 60% longer than Train Y. The speed of Train X is 90 km/h. Train X crosses a pole in 16 seconds. If both trains are running in the opposite direction and cross each other in 13 seconds, find the time taken by Train Y to cross a platform 500 meters long.

(a) 29
(b) 12
(c) 23
(d) 30
(e) 33

Q65. The ratio of P to Q is 3 : 4, and R is 6 more than Q. If the sum of P, Q, and R is 83, find the value of Q. (P, Q, and R positive integers)
(a) 28
(b) 24
(c) 21
(d) 34
(e) 40

Q66. The perimeter of a rectangle is 74 cm, and the length of the rectangle is 4 cm more than twice the breadth. Find the area of the rectangle (in cm^2).
(a) 304
(b) 286
(c) 294
(d) 226
(e) 258

Q67. 35% of A is equal to 70% of B. If the average of A and B is 10 more than B, and the average of A, B, and C is 60, then find the average of A and C.
(a) 100
(b) 90
(c) 80
(d) 70
(e) 50

Q68. A set M consists of five consecutive multiples of 6, while another set N consists of four consecutive multiples of 8. If the average of N is 4 less than the average of M, and the average of the smallest and largest numbers of M is 66, then find the sum of the numbers in set N.
(a) 296
(b) 303
(c) 248
(d) 240
(e) 216

Q69. Riya scores 180 in English and 160 in Science. Meena scores 190 in English. If the average score of Meena is 10 more than the average score of Riya in both subjects, then find the average marks obtained by Riya and Meena in Science.
(a) 140
(b) 145
(c) 150
(d) 165
(e) 180

Q70. Monthly saving of Ravi is 50% of his monthly expense. If his monthly expense increases by 50% and his monthly income increases by 20%, then his monthly saving decreases by Rs. 6000. Find the initial monthly income of Ravi.
(a) 44000
(b) 45000
(c) 42000
(d) 48000
(e) 47000

Directions (71-73): Read the instruction and answer the following questions.
There are two company A and B selling laptops in three different months (august, September and October).
For A - The ratio of laptops sold in august and September is 7:13. The difference between laptops sold in august and September is equal to number of laptops sold in October.
For B – the number of laptops sold in October is double than august. 36 laptops sold in September. Laptops sold in October by B is 12 more than laptops sold by A in August
Note – total laptops sold in September from both the shops = 88

Q71. Find the total laptops sold by A in all the given months.
(a) 104
(b) 105
(c) 106
(d) 109
(e) 110

Q72. Find the ratio of laptops sold in August by A to total laptops sold in October by A and B.
(a) 10:11
(b) 16:11
(c) 16:7
(d) 7:16
(e) 11:16

Q73. Find the average of laptops sold by A in October and B in September.
(a) 30
(b) 50
(c) 60
(d) 80
(e) 100

Q74. A man invested Rs P in simple interest at 10% p.a. for 3 years and received interest of Rs 960. If he had invested Rs (P + 400) at compound interest at the same rate for two years, then find the amount he received after two years (in Rs).
(a) 4424
(b) 4536
(c) 4356
(d) 4562
(e) 4882

Directions (75-80): What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value)

Q75. $189.98 + 49.96\%\ of\ 539.98 + ? = 630.03$

(a) 190
(b) 170
(c) 120
(d) 240
(e) 200

Q76.

$\frac{276.02}{12.03} \times \frac{79.99}{115.01} \times ? = 31.99\%\ \text{of}\ 199.98$

(a) 4
(b) 16
(c) 30
(d) 8
(e) 24

Q77. $(284.02 + 184.001 \div 3.997) \div (594.01 \div 9.02) = ?$

(a) 25
(b) 15
(c) 20
(d) 5
(e) 10

Q78. $684.03 + 2171.999 \div 5.98 + 49.98 \times 5.02 = ?^2$

(a) 42
(b) 36
(c) 24
(d) 26
(e) 16

Q79. $(79.97\%\ of\ 250.02)\ of\ 4.99 \div (4.97)^2 = ?$

(a) 40
(b) 70
(c) 90
(d) 60
(e) 20

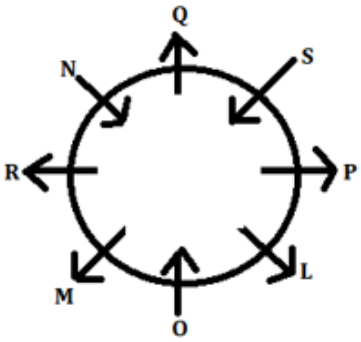
Q80.

$89.99\%\ of\ 440.01 + \frac{9}{11} of\ 120.98 = ?\ -45.11 \times 2.09$

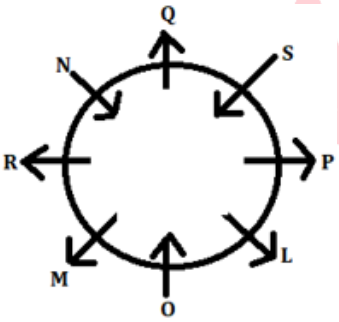
(a) 440
(b) 585
(c) 695
(d) 605
(e) 820

Solutions

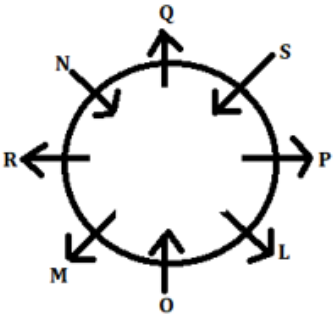
S1. Ans.(d)
Sol.



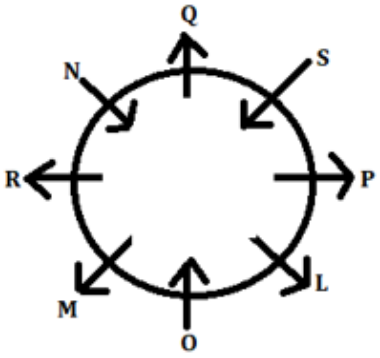
S2. Ans.(c)
Sol.



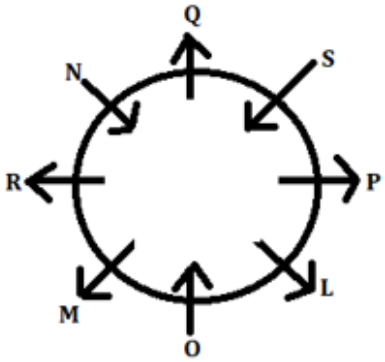
S3. Ans.(e)
Sol.



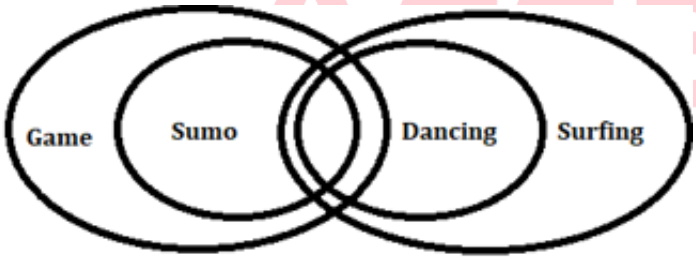
S4. Ans.(c)
Sol.



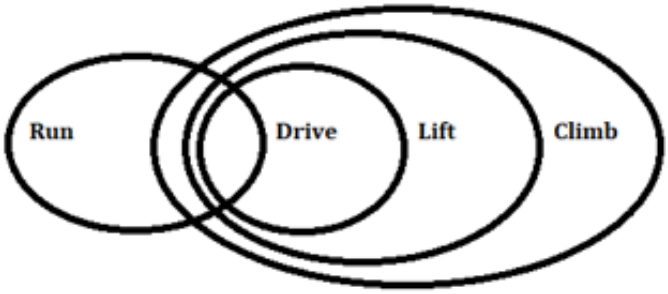
S5. Ans.(b)
Sol.



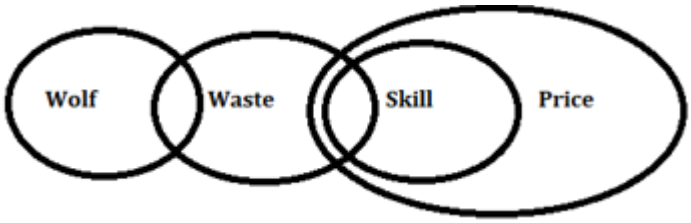
S6. Ans.(a)
Sol.



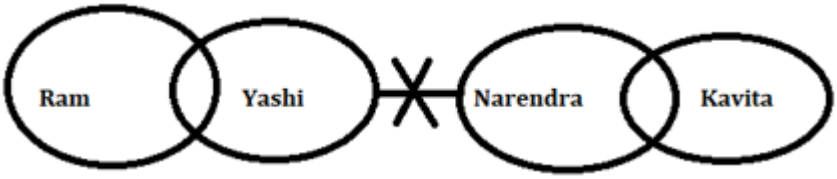
S7. Ans.(b)
Sol.



S8. Ans.(c)
Sol.



S9. Ans.(c)
Sol.



S10. Ans.(d)
Sol.

Designations	Persons
CMD	T
CEO	W
COO	U
CFO	S
MD	X
Senior Manager (SM)	Z
Assistant Manager (AM)	V
Clerk	Y
Peon	R

S11. Ans.(b)
Sol.

Designations	Persons
CMD	T
CEO	W
COO	U
CFO	S
MD	X
Senior Manager (SM)	Z
Assistant Manager (AM)	V
Clerk	Y
Peon	R

S12. Ans.(d)
Sol.

Designations	Persons
CMD	T
CEO	W
COO	U
CFO	S
MD	X
Senior Manager (SM)	Z
Assistant Manager (AM)	V
Clerk	Y
Peon	R

S13. Ans.(d)
Sol.

Designations	Persons
CMD	T
CEO	W
COO	U
CFO	S
MD	X
Senior Manager (SM)	Z
Assistant Manager (AM)	V
Clerk	Y
Peon	R

S14. Ans.(b)
Sol. Given number: 386945275
After applying the given condition: 987655432
Required sum = 7-2 = 5

S15. Ans.(a)
Sol. I. E>O - True
II. G< T – False

S16. Ans.(e)
Sol. I. H > R - False
II. W < U - False

S17. Ans.(a)
Sol. I. J > Q - True
II. I > Y - False

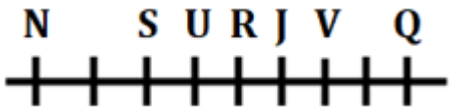
S18. Ans.(b)

Sol. I. K > B - False

II. I > Y - True

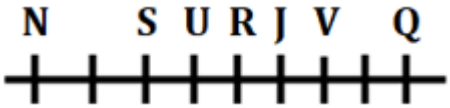
S19. Ans.(e)

Sol.



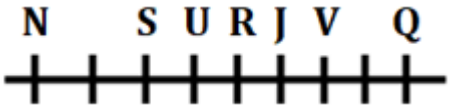
S20. Ans.(b)

Sol.



S21. Ans.(e)

Sol.



S22. Ans.(d)

Sol.

S23. Ans.(b)

Sol.

Floors	Persons
7	M
6	R
5	N
4	Q
3	O
2	S
1	P

S24. Ans.(a)
Sol.

Floors	Persons
7	M
6	R
5	N
4	Q
3	O
2	S
1	P

S25. Ans.(c)
Sol.

Floors	Persons
7	M
6	R
5	N
4	Q
3	O
2	S
1	P

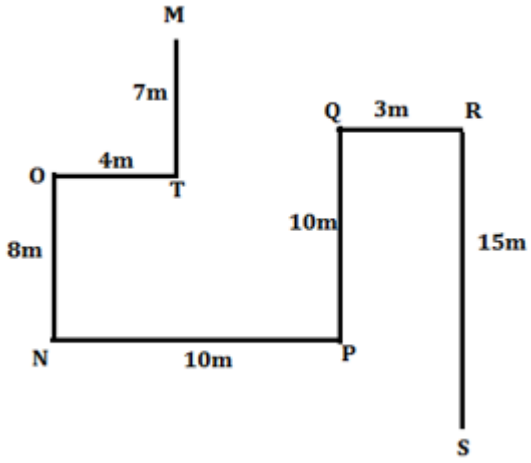
S26. Ans.(e)
Sol.

Floors	Persons
7	M
6	R
5	N
4	Q
3	O
2	S
1	P

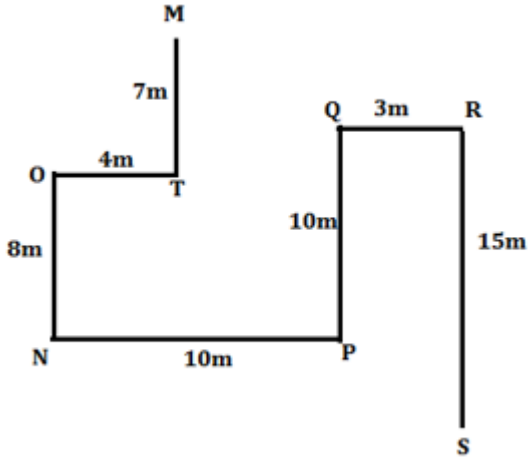
S27. Ans.(d)
Sol.

Floors	Persons
7	M
6	R
5	N
4	Q
3	O
2	S
1	P

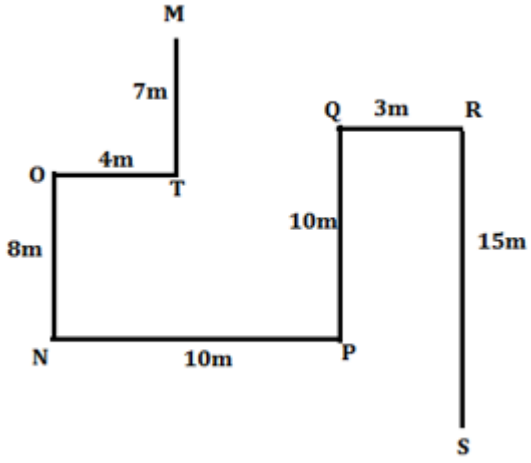
S28. Ans.(d)
Sol.



S29. Ans.(a)
Sol.



S30. Ans.(d)
Sol.



S31. Ans.(a)

Sol.

Products
A
F
B
H
C
G
D
J
E

S32. Ans.(c)

Sol.

Products
A
F
B
H
C
G
D
J
E

S33. Ans.(d)

Sol.

Products
A
F
B
H
C
G
D
J
E

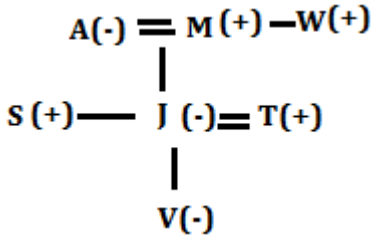
S34. Ans.(a)
Sol.

Products
A
F
B
H
C
G
D
J
E

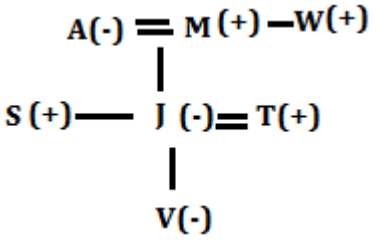
S35. Ans.(c)
Sol.

Products
A
F
B
H
C
G
D
J
E

S36. Ans.(a)
Sol.

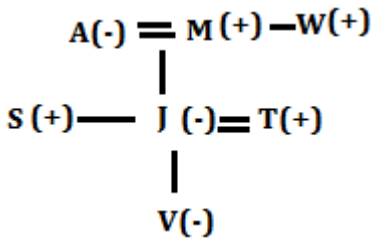


S37. Ans.(b)
Sol.



S38. Ans.(a)

Sol.



S39. Ans.(d)

S40. Ans.(c)

Sol. 3rd letter is just preceded by 1st letter and 2nd letter is 3rd succeeded by 1st letter.

S41. Ans.(b)

Sol. The pattern of the series:

18, 22, 49, 65, 190, **?=226**

4 27 16 125 36

2^2 3^3 4^2 5^3 6^2

S42. Ans.(a)

Sol. The pattern of the series:

?=201, 219, 246, 283, 331, 391

18 27 37 48 60

9 10 11 12

S43. Ans.(e)

Sol. The pattern of the series:

4.25, 17, 68, 272, **?=1088**, 4352

× 4 × 4 × 4 × 4 × 4

S44. Ans.(a)

Sol. The pattern of the series:

37, **?=74**, 148, 296, 592, 1184

× 2 × 2 × 2 × 2 × 2

S45. Ans.(c)

Sol. The pattern of the series:

? =18, 9, 27, 13.5, 40.5, 20.25

÷ 2 × 3 ÷ 2 × 3 ÷ 2

S46. Ans.(c)

Sol. The pattern of the series:

113, 116, 111, 118, **?=109**, 120

+3 -5 +7 -9 +11

Solutions (47-52):

Total items manufactured = 330

Total items sold = 100 +150 = 250

Unsold items = 330 – 250 = 80

Similarly,

Shops	Total items manufactured (shirt+ trouser)	Number of shirts sold	Number of trousers sold	Total items sold (shirt+ trouser)	Total items unsold (shirt+ trouser)
A	330	100	150	250	80
B	245	45	160	205	40
C	450	250	120	370	80
D	500	325	75	400	100

S47. Ans.(a)

Sol.

Required average = $\frac{80+80}{2} = 80$

S48. Ans.(d)

Sol. Total shirts manufactured = 62% of 450 = 279

Total unsold shirts = 279 – 250 = 29

Total unsold trousers =80 – 29 = 51

Required answer = $\frac{51}{100} \times 100 = 51\%$

S49. Ans.(e)

Sol. Required ratio = 100+250: 2×100=350:200=7:4

S50. Ans.(a)

Sol. Required difference =1225 – 300 = 925

S51. Ans.(a)
Sol. Cost of shirts = 24
Cost of trousers = 30
Required answer = 24×100+150×30= 6900

S52. Ans.(a)
Sol. Let defective and non defective items manufactured by B be 1x and 4x respectively.
5x = 245
49 = x
Defective items manufactured= 1x= 49
Non defective items manufactured = 4x=196
Defective items sold = 20% of 205 = 41
Non defective items sold =205 – 41 = 164
Defective items unsold = 49 – 41 = 8
Non defective items unsold =196 – 164 =32
Required answer =164 - 8 = 156

S53. Ans.(d)
Sol.
Required answer $= (330 + 200) - (330 + 200) \times \frac{50}{100} - 25$
=530-265-25=240

S54. Ans.(a)
Sol. Required difference = 250 + 160 – 330 = 80

S55. Ans.(a)
Sol.
Required answer $= \frac{200-180}{200} \times 100 = 10\%$

S56. Ans.(e)
Sol. Item A sold in July = 140% of 160 = 224
Defective item A = 3/4 of 224 = 168
Required answer = 5×168=Rs 840

S57. Ans.(e)
Sol. Required ratio = 320+330 : 160+180
= 650 : 340 = 65:34

S58. Ans.(a)
Sol.
Required answer $= \frac{200+210}{250} \times 100 = 164\%$

S59. Ans.(c)
Sol. Information Given in the Question:
Speed in still water = 20 km/hr
Ratio of downstream to upstream speed = 5 : 3
Distance downstream = 240 km
Concept/Formula Used in the Question:
Let downstream speed = 5x and upstream speed = 3x
Speed in still water = (Downstream + Upstream) / 2
Time = Distance / Speed
Detailed Explanation:
Let downstream speed = 5x and upstream speed = 3x
Then, speed in still water = (5x + 3x)/2 = 8x/2 = 4x
Given 4x = 20 → x = 5
So downstream speed = 5x = 5 × 5 = 25 km/hr
Time taken to cover 240 km downstream = Distance / Speed = 240 / 25 = 9.6 hours

S60. Ans.(a)
Sol. Information Given in the Question:
Initial milk : water = 5 : 3
16 liters of mixture is removed
4 liters of water is added afterward
New milk : water ratio = 3 : 2
Detailed Explanation:
Let total initial quantity = x liters

Quantity of Milk = $\frac{5}{8}x$ liters

Quantity of Water = $\frac{3}{8}x$ liters

16 liters removed in 5:3

⇒ Milk removed = $\frac{5}{8} \times 16 = 10$ liters

⇒ Water removed = 16 - 10 = 6 liters

Remaining milk = $\frac{5}{8}x - 10$

Remaining water = $\frac{3}{8}x - 6 + 4 = \frac{3}{8}x - 2$

ATQ,

$$\frac{\frac{5x}{8} - 10}{\frac{3x}{8} - 2} = \frac{3}{2}$$

$$2 \times (\frac{5x}{8} - 10) = 3 \times (\frac{3x}{8} - 2)$$

$$(\frac{10x}{8} - 20) = (\frac{9x}{8} - 6)$$

$$10x - 160 = 9x - 48$$

x=112
Initial quantity of milk = (5/8) × 112 = 70 liters

S61. Ans.(b)
Sol. Information Given in the Question:
A + B can do the work in 20 days
A alone can do it in 30 days
B does 40% of the work in (Y + 5) days
We need to find the value of Y
Detailed Explanation:
Let the total work (LCM of 20 and 30) = 60 units
Efficiency of A and B together = 60/20 = 3 units/day
Efficiency of A = 60/30 = 2 units/day
Efficiency of B = 3 - 2 = 1 units/day
ATQ,

$$\frac{60 \times \frac{40}{100}}{1} = Y + 5$$

24 = Y +5
19 = Y

S62. Ans.(d)
Sol. Information Given in the Question:
CP : SP = 4 : 5
Marked Price (MP) = ₹8000
Discount = 20%
Concept/Formula Used in the Question:
SP = MP × (1 – Discount%)
Profit = SP – CP
Detailed Explanation:
Selling Price after 20% discount:
SP=8000×(1– 0.20)=8000×0.8=Rs 6400
Let CP : SP = 4 : 5
⇒ CP = 4x, SP = 5x
SP = Rs 6400
⇒ 5x = 6400
⇒ x = 1280
So, CP = 4x = 4 × 1280 = Rs 5120
Profit = SP – CP = 6400 – 5120 = Rs1280

S63. Ans.(e)
Sol. Information Given in the Question:
A's investment = Rs 6000 for 12 months
B's investment = 9000 for *x* months
B's share in profit = Rs 1600 out of Rs 4800
Concept/Formula Used in the Question:
Profit sharing ratio = Investment × Time

Detailed Explanation:

Let the time period (in months) for which B invested his money in the business be X

Profit sharing ratio A to B = 6000×12 :9000×X

ATQ,

$$\frac{6000 \times 12}{9000 \times X} = \frac{3200}{1600}$$

$$\frac{6000 \times 12}{9000 \times X} = \frac{2}{1}$$

12 = 3X

4 = X

S64. Ans.(d)

Sol. Information Given in the Question:

Train X is 60% longer than Train Y.

Speed of Train X = 90 km/h.

Train X crosses a pole in 16 seconds.

Time taken for Train X and Train Y to cross each other (opposite direction) = 13 seconds.

Required: Time taken by Train Y to cross a platform of 500 meters**.**

Concept/Formula Used in the Question:

Speed (in m/s) = (Speed in km/h) × (5/18)

Length = Speed × Time

When two trains cross each other in opposite directions:

Relative Speed = Sum of their speeds

Time to cross platform = (Length of Train Y + Platform Length) / Speed of Train Y

Detailed Explanation:

Convert speed of Train X to m/s:

$$90 \times \frac{5}{18} = 25 \text{ m/s}$$

Length of Train X =25×16=400 meters

Let length of Train Y = L meters

Given Train X is 60% longer:

$$400 = 1.6L$$

$$L = \frac{400}{1.6} = 250 \text{ meters}$$

Let speed of Train Y = S m/s

Trains cross each other in 13 seconds:

Relative speed=25+S

Length of train X + Length of train Y = (400+250)=650 meters

650=(25+S)×13

$$25 + S = \frac{650}{13} = 50$$

S=25 m/s

Time for Train Y to cross 500-meter platform:

"Total distance=250+500=750 meters

$$\text{Time} = \frac{750}{25} = 30 \text{ seconds}$$

S65. Ans.(a)
Sol. Information Given in the Question:
Ratio of P : Q = 3 : 4
R = Q + 6
P + Q + R = 83
P, Q, R are positive integers.
Concept/Formula Used in the Question:
Ratio values imply: P = 3x, Q = 4x for some x
R = Q + 6 = 4x + 6
Total sum: P + Q + R = 83
Detailed Explanation:
Let:
P = 3x
Q = 4x
R = 4x + 6
ATQ,
$3x+4x+(4x+6)=83$
$11x+6=83$
$11x=77$
$x=7$
Q = 4x = 4 × 7 = 28

S66. Ans.(b)
Sol. Information Given in the Question:
Perimeter of the rectangle = 74 cm
Length = 2 × Breadth + 4 cm
Need to find: Area of the rectangle
Concept/Formula Used in the Question:
Perimeter of rectangle = 2 × (Length + Breadth)
Area of rectangle = Length × Breadth
Detailed Explanation:
Let breadth = x cm
Then, length = 2x + 4 cm
Perimeter = 2 × (length + breadth) = 74
$2\times((2x+4)+x)=74$
$2\times(3x+4)=74$
$6x+8=74$
$6x=66$
$x=11$
So:
Breadth = 11 cm
Length = 2 × 11 + 4 = 26 cm
Area = 26 × 11 = 286 cm^2

S67. Ans.(c)

Sol. Information Given in the Question:

35% of A = 70% of B

Average of A and B = B + 10

Average of A, B, and C = 60

Required: Average of A and C

Concept/Formula Used in the Question:

Percentages: 0.35A=0.70B

Average of two numbers: (A+B)/2

Average of three numbers: (A+B+C)/3

Detailed Explanation:

From 0.35A=0.70B, divide both sides by 0.35:

A=2B

Average of A and B is B + 10:

$$\frac{A+B}{2} = B + 10$$

$$\frac{2B+B}{2} = B + 10$$

$$\frac{3B}{2} = B + 10$$

$$3B = 2B + 20 \Rightarrow B = 20$$

Now, A = 2B = 40

Use the average of A, B, C to find C:

$$\frac{A+B+C}{3} = 60$$

$$\frac{40+20+C}{3} = 60$$

60+C=180

C=120

Required: Average of A and C = (40 + 120)/2 = 80

S68. Ans.(c)

Sol. Information Given in the Question:

Set M: 5 consecutive multiples of 6

Set N: 4 consecutive multiples of 8

Average of N is 4 less than average of M

Average of smallest and largest of M = 66

Required: Sum of all numbers in set N

Concept/Formula Used in the Question:

For consecutive numbers, average = middle term

Average of smallest and largest = (First + Last)/2

Average × Number of terms = Total sum

Detailed Explanation:
Let the 5 consecutive multiples of 6 in M be:
6x,6x+6,6x+12,6x+18,6x+24
So, smallest = 6x
Largest = 6x + 24
Average of smallest and largest =
$$\frac{6x + (6x + 24)}{2} = \frac{12x + 24}{2} = 6x + 12$$
6x+12=66
6x=54
x=9
So, the numbers in set M are:
54, 60, 66, 72, 78
Average of M = middle term = 66
Average of N = 66 - 4 = 62
Let the 4 consecutive multiples of 8 be:
8y,8y+8,8y+16,8y+24
Average = 8y + 12
8y+12=62
8y=50
y=6.25
So, numbers in N are:
8×6.25=50, then 58, 66, 74
Sum of N = 50+58+66+74=248

S69. Ans.(d)
Sol. Information Given in the Question:
Riya's English score = 180
Riya's Science score = 160
Meena's English score = 190
Meena's average score = Riya's average + 10
Need to find the **average of their Science scores**
Concept/Formula Used in the Question:
Average = (Sum of scores) / Number of subjects
Use given averages to find Meena's Science score
Average of two numbers = (Sum of both) / 2
Detailed Explanation:
Riya's Average =
$$\frac{180 + 160}{2} = \frac{340}{2} = 170$$
Meena's average = Riya's average + 10 = 170 + 10 = 180
Let Meena's Science marks = x
Then, Meena's average
$$\frac{190 + x}{2} = 180$$
$$190 + x = 360$$
$$x = 170$$

So, Meena's Science = 170
Riya's Science = 160
Required average = $\frac{160+170}{2} = \frac{330}{2} = 165$

S70. Ans.(b)
Sol. Information Given in the Question:
Ravi's saving = 50% of his expense → Saving = 0.5 × Expense
Income = Expense + Saving = 1.5 × Expense
After changes:
Expense increases by 50% → New Expense = 1.5 × Expense
Income increases by 20% → New Income = 1.2 × Income
New Saving = New Income - New Expense
New Saving is Rs 6000 less than original saving
Need to find original **income**
Detailed Explanation:
Let monthly expense be Rs x
Saving = 0.5x, Income = x + 0.5x = 1.5x
New Expense = 1.5x
New Income = 1.2 × 1.5x = 1.8x
New Saving = 1.8x - 1.5x = 0.3x
Difference in savings = 0.5x - 0.3x = 0.2x = Rs 6000
⇒ x = Rs 30,000
So, original income = 1.5x = 1.5 × 30,000 = Rs 45,000

Solutions (71-73):
For A
Let the laptops sold in august and September is 7x and 13 x.
Laptops sold in October = 13x – 7x = 6x
For B
Let the laptops sold in October = 2m
Let the laptops sold in august = m
ATQ,
36 + 13x = 88
52 = 13x
4 = x
2m =12+7x
2m = 40

Companies	August	September	October
A	28	52	24
B	20	36	40
Total	48	88	64

S71. Ans.(a)
Sol. Required answer = 28+52+24 = 104

S72. Ans.(d)
Sol. Required answer = 28:64 = 7: 16

S73. Ans.(a)
Sol.

$$\text{Required answer} = \frac{24+36}{2} = 30$$

S74. Ans.(c)
Sol. Information Given in the Question:
Simple Interest (SI) = ₹960
Rate of Interest (R) = 10% p.a.
Time for SI = 3 years
Compound Interest scenario: Principal = P + 400
Time = 2 years
Rate = 10% p.a.
Concept/Formula Used in the Question:
Simple Interest (SI) = (P × R × T) / 100
Compound Amount (A) = $P \times (1 + R/100)^T$
Detailed Explanation:
Use SI formula to find the original Principal (P):

$$SI = \frac{P \times R \times T}{100}$$

$$960 = \frac{P \times 10 \times 3}{100}$$

$$960 = \frac{30P}{100}$$

$$P = \frac{960 \times 100}{30} = 3200$$

Now, new principal for compound interest = P + 400 = 3200 + 400 = Rs 3600
Use compound amount formula:

$$A = 3600 \times \left(1 + \frac{10}{100}\right)^2$$

$$= 3600 \times (1.1)^2$$

$$= 3600 \times 1.21 = \text{Rs } 4356$$

S75. Ans.(b)
Sol.

$$190 + \frac{50}{100} \times 540 + ? = 630$$

?=630-460
?=170

S76. Ans.(a)

Sol.

$\frac{276}{12} \times \frac{80}{115} \times ? = \frac{32}{100} \times 200$

$? = 64 \times \frac{1}{16}$

$? = 4$

S77. Ans.(d)

Sol.

$\left(284 + \frac{184}{4}\right) \div \left(\frac{594}{9}\right) = ?$

$? = 330 \times \frac{1}{66}$

$? = 5$

S78. Ans.(b)

Sol.

$684 + \frac{2172}{6} + 50 \times 5 = ?^2$

$? = \sqrt{1296}$

$? = 36$

S79. Ans.(a)

Sol.

$\left(\frac{80}{100} \times 250\right) \times 5 \times \frac{1}{(5)^2} = ?$

?=40

S80. Ans.(b)

Sol.

$90\%\ of\ 440 + \frac{9}{11}\ of\ 121 = ? - 45 \times 2$

$396 + 99 = ? - 90$

$585 = ?$