Directions (1-9): Read the following passage and answer the given questions.

Water is the foundation of life, yet today, it is under threat like never before. In many parts of the world, a water crisis is unfolding, driven by climate change, population growth, and mismanagement of resources. The World Health Organization estimates that by 2025, half of the world's population will be living in water-stressed areas. The crisis is not just about scarcity but also about water quality. Pollution from industrial, agricultural, and domestic sources has turned many rivers and lakes into toxic pools.

Addressing the water crisis requires global cooperation and innovative solutions. International organizations like the United Nations have been at the forefront of this battle, advocating for sustainable water management policies. Political leaders across the globe are now recognizing the urgency of the situation. Countries like Israel and Singapore have demonstrated that through technology and policy innovations, such as recycling wastewater and rainwater harvesting, water scarcity can be effectively managed.

However, the global response has been fragmented. While some countries have made significant progress, others lag due to political instability, lack of infrastructure, or inadequate funding. The disparity in water management practices across countries poses a significant challenge. Moreover, water is often a source of conflict; rivers and lakes that cross borders can lead to international disputes over allocation and usage rights.

The potential solutions to the water crisis are manifold. Investment in infrastructure to ensure clean and safe water supply is **paramount**. This includes building treatment plants, efficient irrigation systems, and robust distribution networks. There is also a pressing need for policy reforms that prioritize water conservation and equitable distribution. On a broader scale, international cooperation and agreements are vital to manage shared water resources and to address the global aspects of the crisis.

The water crisis is a complex problem, but it is solvable. It requires a multifaceted approach, combining political will, technological innovation, and international cooperation. The future of our planet and generations to come depends on how effectively we address this challenge today.

Q1. According to the passage, what is a significant factor contributing to the water crisis apart from scarcity?
(a) Increased global temperatures leading to evaporating water bodies
(b) Mismanagement of water resources, contributing to the crisis
(c) Over-reliance on underground water sources for agriculture
(d) Rapid industrialization leading to higher water consumption
(e) Inadequate rainfall leading to lower water levels in rivers and lakes

Q2. What approach does the passage suggest is essential to solving the water crisis?
(a) Exclusive dependence on technological progress for water conservation.
(b) Enactment of rigorous global regulations for controlling water use.
(c) An integrated approach of political, technological, and cooperative efforts.
(d) Transfer of water resources management to private entities for better efficiency.
(e) Concentration solely on reforms in national water policy.

Q3. Which of the following statements is NOT supported by the passage?
(a) Water quality is as significant an issue as water scarcity.
(b) By 2025, water stress will impact the majority of the world's population.
(c) Political instability is a major barrier to water crisis management in some countries.
(d) International disputes over water are primarily due to its quality.
(e) Investment in infrastructure is crucial for ensuring a clean and safe water supply.

Q4. According to the passage, what role have international organizations played in addressing the water crisis?
(a) They have primarily focused on funding water infrastructure projects.
(b) Their involvement has been limited to technological research in water conservation.
(c) They advocate for sustainable water management policies.
(d) They enforce international laws to manage shared water resources.
(e) Their role has been insignificant in the global response to the water crisis.

Q5. Which of the following is not a proposed solution to the water crisis mentioned in the passage?
(a) Recycling wastewater and rainwater harvesting
(b) Building treatment plants and efficient irrigation systems
(c) Policy reforms prioritizing water conservation
(d) Increasing the global production of desalinated water
(e) International agreements to manage shared water resources

Q6. The passage implies that water scarcity can be effectively managed by:
(a) Strictly regulating industrial and agricultural water usage
(b) Implementing nationwide water rationing policies
(c) Increasing public awareness about the importance of water conservation
(d) Relying solely on natural sources of water like rivers and lakes
(e) Employing technological and policy innovations

Q7. Identify the correct statement based on the passage.
(a) Most countries have achieved significant progress in water management.
(b) Water pollution is mainly caused by industrial sources, excluding agriculture.
(c) Lack of infrastructure is one of the major barriers to addressing the water crisis in some regions.
(d) Water scarcity is solely a result of climate change.
(e) International cooperation on water issues has been uniformly successful.

Q8. The passage describes rivers and lakes that cross borders as potential sources of _____.
(a) innovation
(b) conflict
(c) abundance
(d) pollution
(e) cooperation

Q9. Choose the antonym of 'paramount' as used in the passage.
(a) Crucial
(b) Insignificant
(c) Essential
(d) Fundamental
(e) Primary

Q10. Which of the following titles best captures the central theme of the passage?
(a) The Economic Costs of Water Pollution
(b) Technological Solutions Alone Can End Water Scarcity
(c) Local Water Conflicts and Their Historical Roots
(d) A Global Call for Cooperative and Innovative Water Management
(e) Climate Change as the Sole Driver of the Water Crisis

Directions (11-16): Read each sentence to find out whether there is any grammatical or idiomatic error in it. The error, if any, will be in one part of the sentence. The number of that part is the answer. If there is 'No error', the answer is (e). (Ignore errors of punctuation, if any.)

Q11. Many tourists (A)/ are not aware (B)/ that swimming in this lake (C)/ are prohibited. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q12. His performance in (A)/ the play was (B)/ far more better than (C)/ his previous roles. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q13. We didn't get (A)/ to see the castle, (B)/ nor did we see (C)/ the cathedral. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q14. She could not hardly (A)/ believe what she was hearing, (B)/ as the news was (C)/ too shocking for her. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q15. The number of students (A)/ who has applied for the scholarship (B)/ is lower than (C)/ the previous year. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q16. She is one of the women (A)/ who always goes (B)/ out of her way (C)/ to help others. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q17. Neither of the reports (A)/ give a clear explanation (B)/ for the decline in (C)/ sales last month. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q18. John and his brother has started (A)/ their own software development firm (B)/ which specializes in mobile applications (C)/ and cloud computing services. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q19. She had waited for the interview results (A)/ for over a month (B)/ but when they finally arrived (C)/ she realize that it was worth the wait. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q20. Not only the manager but also the (A)/ employees is committed to achieving (B)/ the company's long-term goals (C)/, and improving its overall performance. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q21. Rarely we do see (A)/ such a dedication and commitment (B)/ shown by an individual (C)/ in this competitive environment. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Directions (22-26): In each of the question given below, a statement has been given with a blank. Some words or phrases have been given in the options following the statement. Choose the most appropriate word or phrase that could fit in the statement to make it contextually meaningful and grammatically correct.

Q22. The treaty aimed to foster _____ between the neighboring countries.
(a) animosity
(b) discord
(c) peace
(d) hostility
(e) conflict

Q23. His argument was so convincing that it _____ all doubts.
(a) exacerbated
(b) dispelled
(c) accumulated
(d) ignited
(e) fostered

Q24. To _____ the issue, the manager proposed a series of meetings.
(a) complicate
(b) overlook
(c) neglect
(d) address
(e) bypass

Q25. The documentary provides a _____ glimpse into the lives of migrants covering all the aspects of their lives.
(a) superficial
(b) cursory
(c) brief
(d) fleeting
(e) profound

Q26. Her memoirs reveal a life _____ with extraordinary adventures.
(a) depleted
(b) lacking
(c) scant
(d) void
(e) brimming

Directions (27-30): A few sentences are provided in the following questions, each with a phrase highlighted in bold. There may or may not be an error in the highlighted phrase. The erroneous phrase can be replaced with one of the given alternatives. Choose "No replacement required" as your response if the highlighted phrase is correct.

Q27. The manager's ability to handle diverse tasks simultaneously is one of his **most essential quality**.
(a) most essential qualities
(b) mostly essential qualities
(c) most dispensable qualities
(d) most ingrained quality
(e) No replacement required

Q28. The new software update aims to **rectify any existing bugs and enhancing** the overall user experience.
(a) project some existing bugs and enhancing
(b) embeds any existing bugs and develops
(c) secure any existing bugs and constructing
(d) fix any existing bugs and enhances
(e) No replacement required

Q29. The players' performance was not up to the mark, and **they need to put on** more hard work.
(a) they are looking for
(b) they should need to
(c) they needs to
(d) they demanded for
(e) No replacement required

Q30. His dedication to the project was **really perpetuate to a long** the quality and timeliness of the deliverables.
(a) very vulnerable hence it
(b) clearly visible in his project
(c) so immense as it reflects
(d) meeting all the deadlines
(e) No replacement required

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

Fourteen persons sit in two parallel rows such that seven persons sit in each row. The persons sit in row 1 face south and the persons sit in row 2 faces north. The persons sit in row 1 faces the person sits in row 2 and vice versa.

Three persons sit between S and M who faces north. S sits at the extreme end. O sits to the immediate right of M. The one who faces O sits third to the left of A. Two persons sit between A and F who sits to the immediate right of C. D is the only neighbour of G and faces P. P doesn't sit adjacent to A. Q sits second to the right of P. E sits adjacent to B who doesn't face Q. N sits to the right of R.

Q31. How many persons sit between P and N?
(a) Three
(b) Four
(c) Two
(d) One
(e) None

Q32. Who among the following faces the one who sits immediate right of B?
(a) Q
(b) R
(c) N
(d) O
(e) M

Q33. Four of the following five are alike in certain way and thus forms a group, then who among the following doesn't belong to that group?
(a) S
(b) N
(c) G
(d) Q
(e) C

Q34. Which among the following statement(s) is/are true?
I. Three persons sit to the left of E
II. O sits adjacent to N
III. E sits in row 1
(a) Only II
(b) Both II and III
(c) Only I
(d) Both I and II
(e) All I, II and III

Q35. Who among the following sits third to the right of P?
(a) Q
(b) R
(c) N
(d) O
(e) M

Directions (36-40): In each question below some statements are given followed by two conclusions numbered as 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-
(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

Q36. Statements: Only a few Primer are liner
No liner is blushes
All blushes are foundation
Conclusions: I. All Primer can never be blushes
II. All foundation can be liner

Q37. Statements: Only pens are copies
Some books are pens
Some books are not pencils
Conclusions: I. Some pens are definitely not pencils
II. All pencils being copies is not a possibility

Q38. Statements: All ride is transport
Only a few vehicles are transport
Only a few passengers are vehicles
Conclusions: I. No ride is passengers
II. All ride is passengers

Q39. Statements: Only a few Perk is Kitkat
No Kitkat is munch
Only a few Snickers is munch
Conclusions: I. All perks are Snickers
II. Some Snickers are not Kitkat

Q40. Statements: All Movie are suspense
All suspense is thriller
No thriller is drama
Conclusions: I. Some movie is not drama
II. All Movie are drama

Q41. If in the given word "DISAPPEARANCE" we remove all the vowels and replace all the consonants with its just previous letter, then find how many vowels are there in the new arrangement?
(a) None
(b) One
(c) Two
(d) Three
(e) Four

Directions (42-46): Study the following information carefully and answer the questions given below.
Eight boxes are kept one above the other in the form of stack. Only two boxes are kept below box F. One box is kept between box F and box E. As many boxes kept above box E as below box B. Box A is kept two boxes above box B. More than one box is kept between box C and box A. Box H is kept below box C. Box G is kept adjacent to box D but not kept adjacent to box A.

Q42. How many boxes are kept between box D and box C?
(a) Five
(b) Four
(c) Six
(d) Three
(e) None of these

Q43. Which among the following statements(s) is/are not true?
(a) Box G is kept at the topmost position
(b) Box A is kept adjacent to box E
(c) More than three boxes are kept below box B
(d) Box D is kept above box F
(e) All are true

Q44. If box G is related to box A, in the similar manner box D is related to box E then which among the following box is related to box C?
(a) Box H
(b) Box A
(c) Box B
(d) Either box A or box H
(e) None of these

Q45. Which among the following box is kept at second position from the bottommost position?
(a) Box A
(b) Box D
(c) Box F
(d) Box H
(e) Box C

Q46. How many boxes are kept below the box which is kept just above box E?
(a) Five
(b) Three
(c) Four
(d) Six
(e) More than Six

Directions (47-48): Study the following information carefully and answer the questions given below.
Point A is 4m south of point B which is 3m east of point C. Point D is 5m north of point C and 6m west of point E. Point F is in south of point E and east of point B. Point G is 6m east of point H. Point I is 2m east of point F and 4m north of point H.

Q47. In which direction is point D with respect to point F?
(a) North-east
(b) North-west
(c) South-east
(d) South-west
(e) North

Q48. What is the total distance from point C to point I?
(a) 17m
(b) 25m
(c) 20m
(d) 18m
(e) None of the above

Q49. Six students get different marks out of 80 and on the basis of it they all are arranged in descending order from left to right. Only one person gets more marks than M. Only two persons get marks between M and the one who gets 36 marks. N gets just lesser marks than D. C gets more marks than F but does not get the highest marks. D gets 16 marks more than C. A gets 39 more marks than C. How many persons get the less marks than A?
(a) Four
(b) Three
(c) Two
(d) Five
(e) One

Q50. If all the digits in the given number "4861952783" are arranged in descending order from left to right. Then find the sum of the digits which are fourth from the left end, sixth from the right end and third from the right end?
(a) 19
(b) 16
(c) 14
(d) 10
(e) 22

Directions (51-55): Study the following information carefully and answer the questions given below:
Seven persons i.e., T, Y, R, V, U, W and S (but not necessarily in the same order) play different sports i.e., Cricket, Hockey, Baseball, Volleyball, Football, Basketball and Chess (but not necessarily in the same order) on different days in the same week which starts from Monday.
One person plays between R and S who plays Baseball. V plays two persons before R. S and the person who plays Volleyball is not the last person to play the match. One person plays between T and the person who plays Volleyball. Neither T nor the person who plays Volleyball plays on Tuesday. T does not play just after S. T neither plays on Monday nor on Wednesday. Two persons play between U and the person who plays Cricket. R does not play Cricket. The person who plays Hockey plays just after W. U does not play Hockey. W and V do not play Basketball. W does not play Football.

Q51. Who among the following persons plays on Saturday?
(a) R
(b) S
(c) The person who Volleyball
(d) The person who Basketball
(e) None of these

Q52. Who among the following persons plays Chess?
(a) The person who plays on Monday
(b) W
(c) R
(d) The person who plays on Sunday
(e) None of these

Q53. How many persons play between Y and the person who plays Cricket?
(a) One
(b) Three
(c) Two
(d) Four
(e) None of these

Q54. Who among the following persons is the first person to play?
(a) W
(b) T
(c) V
(d) Y
(e) None of these

Q55. W plays on which day?
(a) Monday
(b) Thursday
(c) Saturday
(d) Friday
(e) Tuesday

Directions (56-60): Study the following information carefully and answer the questions given below:
Seven persons sit around a circular table where some face inside and some face outside. W sits 3rd to the right of R and both face the same direction. Two persons sit between R and S. Q and W are not an immediate neighbour. Q sits just right of U but not near R. T sits 2nd to the left of S who faces outside. T and Q face same direction. V does not face inside. Not more than two neighbours face the same direction.

Q56. Who sits 4th to the left of V?
(a) T
(b) Q
(c) W
(d) S
(e) U

Q57. How many people sit between W and Q?
(a) One
(b) Three
(c) Either one or three
(d) Four
(e) Either one or four

Q58. If Q is related to R, V is related to W, in the similar way who among the following is related to S?
(a) T
(b) W
(c) U
(d) Q
(e) R

Q59. Which of the following statement(s) is/are true?
I. S and V face same direction
II. R sits 2nd to the right of Q
III. T faces inside
(a) Only II
(b) Both I and II
(c) Both I and III
(d) Only III
(e) Both II and III

Q60. Four of the following five are alike in a certain way and hence form a group. Who among the following does not belong to that group?
(a) Q
(b) V
(c) R
(d) W
(e) S

Directions (61-65): Study the following information carefully and answer the questions given below.

Eight persons - A, B, C, D, E, F, G and H buy a product and at different price viz. $100, $200, $300, $400, $500, $600, $700 and $800 but not necessarily in the same order.

Only G buys a product after the one who buys the most expensive product. Either two or three persons buy the product between G and A. H buys just after the one who buys a product for $600 and just before D who buys a product for $400. One person buys between the one who buys a product for $600 and F. Difference between the price of the product which E buys and the one who buys just before F is equal to the price of the product which G buys. The product price of F is $400 more than the product price of E. B buys after D. The price of the product which H buys is not for $500. Product price of C is 50% more than the product price of G.

Q61. How many persons buy a product between G and H?
(a) Two
(b) Three
(c) Four
(d) Five
(e) Cannot be determined

Q62. What is the price of the product that E buys?
(a) $300
(b) $200
(c) $100
(d) $500
(e) Cannot be determined

Q63. Who buys the product for $600?
(a) B
(b) E
(c) F
(d) G
(e) A

Q64. Which of the following statements is true?
(a) The price of the product which C buys is $700.
(b) A buys the product for $800.
(c) F buys the product for $500.
(d) D buys just before H.
(e) The price of the product which B buys is $600.

Q65. Who buys the product for $100?
(a) B
(b) E
(c) F
(d) G
(e) A

Directions (66-70): Find out the missing number in the given number series.

Q66. 6, 3, 3, 6, ?, 72
(a) 18
(b) 15
(c) 9
(d) 12
(e) 36

Q67. 11, 22, 35, 52, 71, ?
(a) 91
(b) 92
(c) 93
(d) 94
(e) 100

Q68. 10, 55, 224, ?, 1352, 1353
(a) 635
(b) 630
(c) 600
(d) 625
(e) 675

Q69. 5, 126, 270, 439, 635, ?
(a) 843
(b) 831
(c) 840
(d) 860
(e) 830

Q70. 1221, 492, 1004, 661, 877, ?
(a) 752
(b) 750
(c) 751
(d) 755
(e) 745

Directions (71-75): What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value)

Q71. $\sqrt{784.08} \times 5.14 + 49.89\%$ of $450.12 = ? + 185.99$
(a) 179
(b) 169
(c) 189
(d) 209
(e) 199

Q72. 25.188% of 29.89% of 950.34 + 5.95 × 73.04 = ?
(a) 409
(b) 509
(c) 609
(d) 569
(e) 659

Q73. $(17.09)^2 + (19.89)^2 - 19.87 \times 5.99 = ?$
(a) 469
(b) 509
(c) 599
(d) 569
(e) 669

Q74. $(23.12)^2 - (15.101)^2 + (10.93)^2 = ?$
(a) 325
(b) 375
(c) 475
(d) 525
(e) 425

Q75. $500.113 \div 24.98 \times 13.06 - 160.05 = ?^2$

(a) 9

(b) 11

(c) 12

(d) 10

(e) 15

Q76. The present age of A is 50% more than B and the ratio of A's age five years ago to B's age ten years hence is 1 : 2. Find the sum of present age A & B?

(a) 30 years

(b) 25 years

(c) 45 years

(d) 35 years

(e) 20 years

Directions (77-81): Each question consists of two equations I & II. You have to solve each equation and mark answer as per instructions.

(a) x > y

(b) x ≤ y

(c) x = y or no relation can be established

(d) x < y

(e) x ≥ y

Q77. I. $x^2 + 5x + 6 = 0$

II. $y^2 + 7y + 12 = 0$

Q78. I. $2x^2 + 5x - 3 = 0$
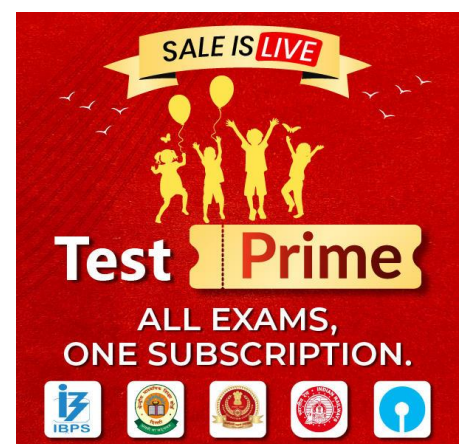
II. $3y^2 - 2y - 1 = 0$

Q79. I. 2x + 3y = 7

II. 4x – 3y = 5

Q80. I. $x^2 - 13x + 42 = 0$

II. $y^2 - 17y + 72 = 0$

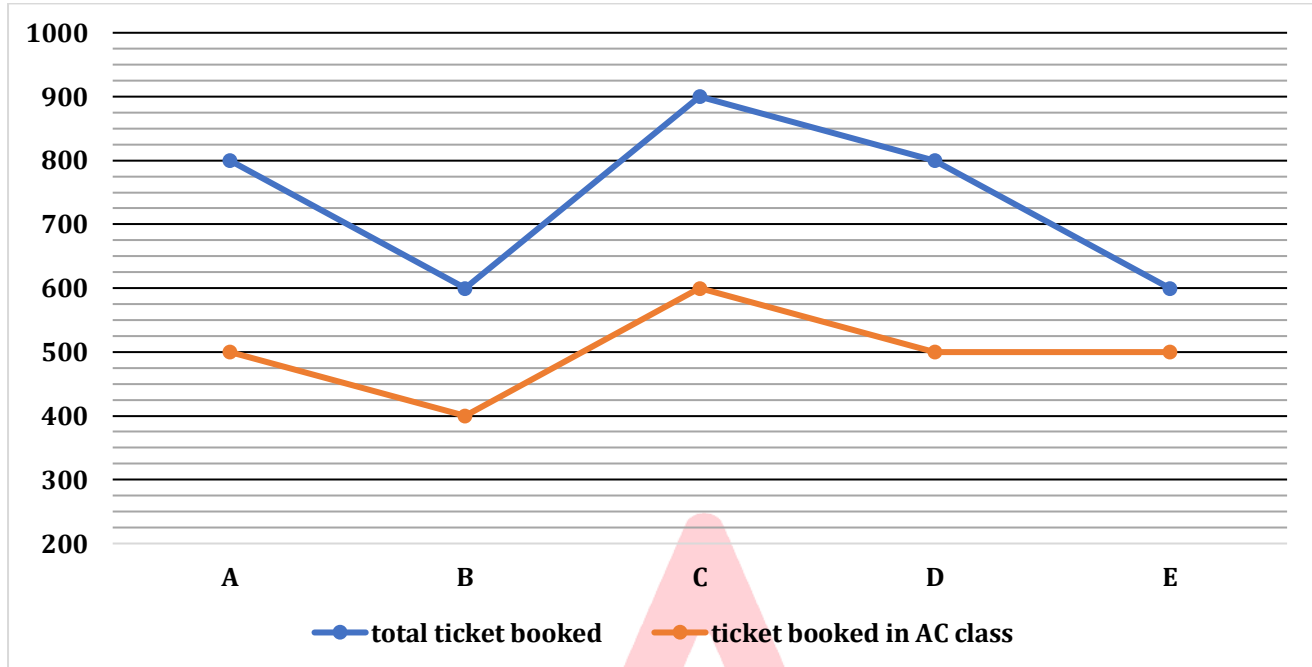**Q81. I.** $x^2 + 6x + 8 = 0$

II. $y^2 + 10y + 24 = 0$

Directions (82–86): Line graph given below shows total tickets booked and total AC tickets booked in five trains (A, B, C, D & E). Read the data carefully and answer the questions.
Note - Total tickets booked = Tickets booked in (AC +sleeper)

Q82. Total tickets booked in train D is what percent more than total tickets booked in train E?
(a) 33.33%
(b) 66.66%
(c) 14%
(d) 30%
(e) 25%

Q83. Find the ratio of total sleeper tickets booked in trains B and C together to total AC tickets booked in train A?
(a) 1 : 10
(b) 11 : 1
(c) 1 : 1
(d) 3 : 4
(e) 9 : 7

Q84. If total tickets booked in train F is 150% more than total sleeper tickets booked in train D and total AC tickets booked in train F is 20% more than total AC tickets booked in train B, then find the total sleeper tickets booked in train F?
(a) 300
(b) 750
(c) 400
(d) 270
(e) 480

Q85. Find the average of total sleeper tickets booked in trains A, B & C?

(a) 260

(b) $266\frac{2}{3}$

(c) $266\frac{1}{3}$

(d) $166\frac{2}{3}$

(e) 266

Q86. Total sleeper tickets booked in train A is what percent of total sleeper tickets booked in D & E together?

(a) 50%

(b) 75%

(c) 60%

(d) 80%

(e) 65%

Directions (87-91): **The table given below shows the number of male employees and ratio of male employees to female employees in six (P, Q, R, S and T) different companies. Study the table carefully and answer the question given below.**

Companies	Number of male employees	Ratio of male employees to female employees
P	120	12:17
Q	75	15:14
R	200	8:9
S	100	10:7
T	180	6:11

Q87. Total number of female employees in T is what percent more than total number of male employees in S?

(a) 140%

(b) 230%

(c) 260%

(d) 245%

(e) 165%

Q88. Find the average number of female employees in company P, Q & T.

(a) 140

(b) 160

(c) 190

(d) 100

(e) 120

Q89. Find the difference between total number of male employees in T and P together and total number of female employees in R?
(a) 140
(b) 100
(c) 65
(d) 75
(e) 25

Q90. Find the ratio of number of female employees in Q to number of male employees in S?
(a) 7:10
(b) 3:7
(c) 3:8
(d) 5:8
(e) 4:7

Q91. Total employees (males + females) in T is how much more than total number of male employees in P and R together?
(a) 160
(b) 190
(c) 150
(d) 140
(e) 310

Q92. Time taken by Seema alone to complete a work is 25% more than the time taken by Babita alone to complete the same work. Both starts working together and after 16 days, 10% of the work is remaining. Find the difference between time taken by Seema alone and Babita alone to complete the same work.
(a) $8\frac{1}{2}$ days
(b) 8 days
(c) 10 days
(d) 12 days
(e) 16 days

Q93. A shopkeeper sold a table at 40% discount and thus making a loss of 10%. If he gives a discount equals to half of the previous discount then he makes a profit of Rs. 60. Find at what price shopkeeper should sell the table to make a profit of 25%?
(a) 600 Rs.
(b) 540 Rs.
(c) 375 Rs.
(d) 360 Rs.
(e) 480 Rs.

Q94. A man invested Rs. X at the rate of R% p.a. on compound interest compounding annually. If compound interest received in second year and third year is Rs.2400 and Rs.2880 respectively, then find the value of X.
(a) Rs.20000
(b) Rs.10000
(c) Rs.12000
(d) Rs.15000
(e) None of the above.

Q95. The average weight of a group increased by 2 kg when a new person having weight of 78 kg joins the group. If the new average weight of the group becomes 70 kg, then find the members in the group initially.
(a) 5
(b) 6
(c) 4
(d) 7
(e) 3

Q96. A & B can do a piece of work together in 24 days and C's efficiency is half of A's efficiency. If all three work together, they can complete the same work in 20 days, then find how many days are required to complete the work, if B and C work together?
(a) 45 days
(b) 42 days
(c) 30 days
(d) 48 days
(e) 44 days

Q97. A car covered a certain distance at a certain speed in a fixed time. If car had moved 9 kmph slower, it would have taken 2 hours more and if it had moved 5 kmph faster, it would have taken 48 min less. Find the distance covered by car?
(a) 300 km
(b) 360 km
(c) 320 km
(d) 400 km
(e) 450 km

Q98. A vessel contains 120 liters of milk. 30 liters of milk taken out from the vessel and replaced by water and this operation repeated two more times. Find the ratio of milk and water in resulting mixture?
(a) 71 : 23
(b) None of these
(c) 23 : 77
(d) 27 : 47
(e) 27 : 37

Q99. A boat takes total 7.5 hours to travel 20 km in upstream and return to the starting point. If the speed of stream is 2 kmph, then find the speed of the boat in still water?
(a) **4** km/h
(b) 6 km/h
(c) **5** km/h
(d) **3** km/h
(e) **7** km/h

Q100. If one side and diagonal of a rectangle are 15 cm and 17 cm respectively, then find the area of rectangle?
(a) 100 cm^2
(b) 110 cm^2
(c) 130 cm^2
(d) 120 cm^2
(e) 140 cm^2

Solutions

S1. Ans.(b)
Sol. The passage explicitly states, "**The crisis is not just about scarcity but also about water quality. Pollution from industrial, agricultural, and domestic sources has turned many rivers and lakes into toxic pools."** This indicates that mismanagement of water resources is a significant factor contributing to the water crisis, alongside scarcity. The other options, while plausible factors, are not mentioned in the passage in this context. For example, increased global temperatures, over-reliance on underground water, and rapid industrialization are not directly mentioned as contributing factors to the water crisis in the given passage.

S2. Ans.(c)
Sol. The passage suggests that solving the water crisis requires **"a multifaceted approach, combining political will, technological innovation, and international cooperation."** This is explicitly stated in the concluding paragraph. The other options, such as sole reliance on technology, strict international laws, privatization, or focusing only on policy reforms, are either not mentioned or not emphasized as essential approaches in the passage.

S3. Ans.(d)
Sol. The passage does not support the statement that international disputes over water are primarily due to its quality. Instead, it mentions that "water is often a source of conflict; rivers and lakes that cross borders can lead to international disputes over allocation and usage rights." This indicates that the disputes are more about allocation and usage rather than quality. The other statements are supported by the passage: water quality is a significant issue (mentioned in the first paragraph), water stress impacting a large population by 2025 (first paragraph), political instability as a barrier (third paragraph), and the importance of infrastructure investment (fourth paragraph).

S4. Ans.(c)
Sol. The passage mentions that "**International organizations like the United Nations have been at the forefront of this battle, advocating for sustainable water management policies.**" This indicates that their role has been primarily in advocating policies. The other roles mentioned in the options, such as funding infrastructure projects, limiting their involvement to technological research, enforcing international laws, or being insignificant, are not mentioned or suggested in the passage.

S5. Ans.(d)
Sol. The passage does not mention increasing the global production of desalinated water as a proposed solution. It does mention recycling wastewater and rainwater harvesting (second paragraph), building treatment plants and efficient irrigation systems, policy reforms for water conservation, and international agreements for managing shared resources (all in the fourth paragraph).

S6. Ans.(e)
Sol. The passage states that "**Countries like Israel and Singapore have demonstrated that through technology and policy innovations, such as recycling wastewater and rainwater harvesting, water scarcity can be effectively managed**." This suggests that technological and policy innovations are key to managing water scarcity, as exemplified by these countries. The other options, like strictly regulating usage, nationwide rationing, increasing public awareness, or relying solely on natural sources, are not mentioned in the passage as effective standalone solutions.

S7. Ans.(c)
Sol. Option (c) "Lack of infrastructure is a major barrier to addressing the water crisis in some regions" is a correct statement based on the passage. The passage mentions that "**while some countries have made significant progress, others lag due to political instability, lack of infrastructure, or inadequate funding.**" This indicates that in some regions, the lack of proper infrastructure is a significant hindrance to effectively managing the water crisis.
As for the other options:
(a) Most countries have achieved significant progress in water management - This is not supported by the passage, as it indicates varying levels of progress among different countries.
(b) Water pollution is mainly caused by industrial sources, excluding agriculture - The passage mentions pollution from various sources including industrial, agricultural, and domestic, not exclusively industrial.
(d) Water scarcity is solely a result of climate change - The passage suggests that the water crisis is due to multiple factors, including climate change, population growth, and mismanagement of resources, not just climate change.
(e) International cooperation on water issues has been uniformly successful - The passage indicates that the global response has been fragmented and not uniformly successful.

S8. Ans.(b)
Sol. The passage mentions, "**Moreover, water is often a source of conflict; rivers and lakes that cross borders can lead to international disputes over allocation and usage** rights." This clearly identifies rivers and lakes that cross borders as potential sources of conflict, not innovation, abundance, pollution, or cooperation.

S9. Ans.(b)
Sol. The word 'paramount' in the passage is used in the context of "Investment in infrastructure to ensure clean and safe water supply is paramount," indicating that it is of utmost importance. The antonym of 'paramount' would be 'insignificant,' which implies something that is not important.
Here are the meanings of each option:
(a) Crucial - of great importance or necessary for something to succeed or exist.
(b) Insignificant - lacking in size, importance, or worth; negligible.
(c) Essential - absolutely necessary or extremely important.
(d) Fundamental - forming a necessary base or core; of central importance.
(e) Primary - of chief importance; principal.

S10. Ans.(d)
Sol. Brief explanations:
(a) The Economic Costs of Water Pollution
- Wrong because the passage is not focused mainly on economic costs, but on global crisis and solutions.
(b) Technological Solutions Alone Can End Water Scarcity
- Wrong because the passage clearly says a *multifaceted* approach is needed, not technology alone.
(c) Local Water Conflicts and Their Historical Roots
- Wrong because conflicts are only one part and there is no discussion of historical roots.
(d) A Global Call for Cooperative and Innovative Water Management
- Right because the passage talks about global crisis, international cooperation, and innovative policies/technology to manage water.
(e) Climate Change as the Sole Driver of the Water Crisis
- Wrong because other causes like population growth and mismanagement are also mentioned.

S11. Ans.(d)
Sol. The error is in part (D). "Are" should be replaced with "is".
RULE: The error is related to subject-verb agreement. In this sentence, the subject is "swimming in this lake," which is a singular action, and it requires a singular verb. "Are" is a plural verb, so it does not agree with the singular subject. The correct form is "is" to match the singular subject.

S12. Ans.(c)
Sol. The error is in part (C). The correct phrase should be "far better than".
RULE: The error involves the use of comparative adjectives. "Better" is already a comparative adjective, so there is no need to use "more" before it. Using "far more better" is redundant and incorrect. The correct phrase should be "far better."

S13. Ans.(e)
Sol. The sentence is grammatically correct.

S14. Ans.(a)

Sol. The error is in part (A). "Not hardly" is a double negative and should be corrected to "hardly" or "could not believe."

RULE: The error involves the use of double negatives. In standard English, using both "could not" and "hardly" in the same sentence creates a double negative, which is grammatically incorrect. It's better to use either "could hardly" or "could not" for clarity.

The correct sentence should be "She could hardly believe what she was hearing, as the news was too shocking for her."

S15. Ans.(b)

Sol. The error is in part (B). "Has" should be replaced with "have" because "students" is a plural noun, and the phrase "number of students" requires a plural verb.

RULE: The error is related to subject-verb agreement. "The number of students" is a singular subject, and it should take a singular verb form, which is "has" in this case. The verb "have" is plural, and it does not agree with the singular subject.

The correct sentence should be "The number of students who have applied for the scholarship is lower than the previous year."

S16. Ans.(b)

Sol. The error is in part (B). The verb "goes" should be "go" to agree with the plural subject "women." The phrase "one of the women" indicates that there are multiple women, so the verb should be in the plural form "go."

The correct sentence should be: "She is one of the women who always go out of her way to help others."

S17. Ans.(b)

Sol. The error in this sentence lies in part (B) in the verb agreement with the subject "Neither of the reports."

RULE: The rule that applies here is related to subjects paired with "neither of" in the context of two things. When "neither of" is used, it refers to not one and not the other of two, which means the subject is considered singular. Therefore, the verb that follows should also be singular to maintain correct subject-verb agreement.

In the given sentence, "give" is a plural verb, but it needs to be singular ("gives") to match the singular subject "Neither of the reports." The corrected part of the sentence should read: "Neither of the reports gives a clear explanation," ensuring that the verb aligns with the singular subject implied by "neither of."

Therefore, the correct sentence would be: "Neither of the reports, **gives** a clear explanation, for the decline in sales, last month."

S18. Ans.(a)

Sol. The error in this sentence is in part (A), specifically with the verb agreement "has started." The subject of the sentence is a compound noun "John and his brother," which refers to more than one person.

RULE: According to the rules of subject-verb agreement, when two or more subjects are connected by "and," they are considered a plural subject and therefore require a plural verb.

The correct verb form to match the plural subject "John and his brother" is "have started," not "has started." The rule is straightforward: a singular subject (he, she, it) requires a singular verb (has, is), while a plural subject (they, we) requires a plural verb (have, are).

Therefore, the correct sentence would be: "John and his brother have started their own software development firm which specializes in mobile applications and cloud computing services."

S19. Ans.(d)

Sol. The error in this sentence lies in the tense of the verb "realize" in part (D). The sentence begins in the past perfect tense with "She had waited for the interview results," indicating an action that was completed before another action in the past. As the narrative progresses, it maintains the past tense narrative with "but when they finally arrived," which sets up the expectation that the subsequent action (her realization) also occurred in the past.

The correct tense to use for "realize" in this context is the past tense, "realized," to maintain consistency with the rest of the sentence, which is narrated in the past tense.

RULE: The rule of consistency in tense dictates that if a sentence begins in the past tense and continues to describe a series of related past events, the verbs should remain in the past tense unless there is a specific reason to change the tense (e.g., shifting to present tense to state a general truth).

Therefore, the correct sentence would be: "She had waited for the interview results for over a month but when they finally arrived, she **realized** that it was worth the wait."

S20. Ans.(b)

Sol. The error in this sentence lies in part (B) with the subject-verb agreement in the phrase "is committed to achieving."

RULE: The construction "Not only... but also..." is used to link two subjects, and the verb should agree with the subject closer to the verb, which in this case is "the employees." Since "the employees" is a plural subject, the verb should also be plural.

The correct verb form to match the plural subject "the employees" is "are," not "is."

Therefore, the correct sentence should read: "Not only the manager but also the employees **are** committed to achieving the company's long-term goals and improving its overall performance."

S21. Ans.(a)

Sol. The error in this sentence lies in the placement of the subject and auxiliary verb in part (A). The correct construction for sentences beginning with adverbs of frequency like "rarely" followed by the subject and verb should involve inversion, where the auxiliary verb comes before the subject when the sentence starts with such an adverb for emphasis. The correct form should be "Rarely do we see," not "Rarely we do see."

RULE: In standard English syntax, when an adverbial modifier of frequency or negation is used at the beginning of a sentence for emphasis, it is followed by an auxiliary verb and then the subject, creating an inverted order. This inversion is necessary for the correct grammatical structure in formal English writing and speaking, especially in sentences starting with words like "rarely," "seldom," "never," etc., to add emphasis or dramatic effect.

Therefore, the correct sentence should read: "Rarely **we do** see such a dedication and commitment shown by an individual in this competitive environment."

S22. Ans.(c)

Sol. The correct answer is (c) **peace**. The sentence suggests the treaty's purpose was to create a harmonious or friendly relationship between the neighboring countries, which is best completed by "peace." "Animosity," "discord," "hostility," and "conflict" all mean feelings of opposition or disagreement, which contradicts the sentence's context.

(a) **Animosity** - Strong hostility or antagonism; hatred.

(b) **Discord** - Lack of agreement or harmony between people or things; conflict.

(c) **Peace** - Freedom from disturbance; tranquility. It also refers to a state of being free from conflict or war.

(d) **Hostility** - Unfriendly or aggressive behavior; opposition or antagonism.

(e) **Conflict** - A serious disagreement or argument, typically a prolonged one; a state of opposition between ideas, interests, or parties.

S23. Ans.(b)

Sol. The correct answer is (b) **dispelled**. The sentence implies that his argument was effective enough to remove or drive away all doubts, which "dispelled" accurately conveys. "Exacerbated" means to make worse, "accumulated" means to gather or collect, "ignited" means to set on fire or excite, and "fostered" means to encourage the development of something, all of which do not fit the context.

(a) **Exacerbated** - Made a problem, bad situation, or negative feeling worse.

(b) **Dispelled** - Made (a doubt, feeling, or belief) disappear.

(c) **Accumulated** - Gathered together or acquired an increasing number or quantity of.

(d) **Ignited** - Set on fire; caused to burn. Also used metaphorically to mean to start or provoke.

(e) **Fostered** - Encouraged or promoted the development of something (typically something regarded as good).

S24. Ans.(d)

Sol. The correct answer is (d) **address**. This indicates that the manager's intention was to deal with or focus on the issue directly, making "address" the correct choice. "Complicate" suggests making something more difficult or complex, which is not the intention of proposing meetings. "Overlook" and "neglect" imply ignoring the issue, and "bypass" means to avoid, none of which are suitable for a proposal to solve or confront a problem directly.

(a) **Complicate** - Make (something) more difficult or complex.

(b) **Overlook** - Fail to notice something; also can mean to view from a higher place.

(c) **Neglect** - Fail to care for properly; disregard.

(d) **Address** - Direct one's attention to; deal with a matter or problem.

(e) **Bypass** - Go past or around; also refers to a surgical procedure to create a passage around an obstruction in a body channel.

S25. Ans.(e)

Sol. The correct answer is (e) **profound**. This suggests that the documentary offers a deep, insightful view into the lives of migrants, which is the most appropriate completion. "Superficial," "cursory," "fleeting," and "brief" all suggest a lack of depth or thoroughness, which does not align with the context of providing a meaningful glimpse.

(a) **Superficial** - Existing or occurring at the surface; shallow in terms of depth of thought, feeling, or character.
(b) **Cursory** - Hasty and therefore not thorough or detailed.
(c) **Brief** - Short in duration; concise.
(d) **Fleeting** - Lasting for a very short time.
(e) **Profound** - Very great or intense; having or showing great knowledge or insight.

S26. Ans.(e)
Sol. The correct answer is (e) **brimming**. This indicates that her life was full to the top with extraordinary adventures, perfectly fitting the context. "Depleted," "scant," "void," and "lacking" all convey the absence or insufficiency of something, which contradicts the idea of a life filled with adventures.
(a) **Depleted** - Diminished in number or quantity; used up.
(b) **Lacking** - Being without; missing.
(c) **Scant** - Barely sufficient or adequate.
(d) **Void** - Completely empty; having no legal force or effect.
(e) **Brimming** - Fill or be full to the point of overflowing.

S27. Ans.(a).
Sol. The given highlighted phrase is incorrect because it uses the singular form "**quality**" when the sentence is referring to a plural concept, which is the manager's abilities or skills.
(a) "**most essential qualities**" - This option correctly replaces the original phrase with the plural form "qualities," making the sentence grammatically and contextually correct.
(b) "**mostly essential qualities**" - This option introduces the adverb "mostly," which changes the meaning and is not necessary in this context.
(c) "**most dispensable qualities**" - This option changes the meaning by using the word "dispensable," which means able to be replaced or done without. This is not in line with the intended meaning.
(d) "**most ingrained quality**" - This option introduces the word "ingrained," which means firmly established and difficult to change. It changes the meaning of the sentence and is not the best fit.
Therefore, the correct answer is (a) "**most essential qualities.**"

S28. Ans.(d)
Sol. The given highlighted phrase is incorrect because it uses the base form "**enhancing**" instead of the correct form "**enhances**" to maintain parallelism with "**fixes**."
(a) "**project some existing bugs and enhancing**" - This option introduces a verb "project" and is not contextually appropriate. Additionally, it uses the base form "enhancing," resulting in a grammatical error.
(b) "**embeds any existing bugs and develops**" - This option introduces the verbs "embeds" and "develops," which change the meaning of the sentence. It is not a suitable replacement.
(c) "**secure any existing bugs and constructing**" - This option introduces the verbs "secure" and "constructing," which are not contextually appropriate. It changes the meaning of the sentence and is grammatically incorrect.
(d) "**fix any existing bugs and enhances**" - This option correctly maintains parallelism by using the correct form "enhances." It is the correct replacement.
Therefore, the correct answer is (d) "**fix any existing bugs and enhances**."

S29. Ans.(e)
Sol. The given highlighted phrase is correct. No replacement is required.
(a) "**they are looking for**" - This option changes the meaning and introduces the phrase "looking for," which is not appropriate in the context of improving performance.
(b) "**they should need to**" - This option introduces the phrase "should need to," which is redundant. "Should" already implies a necessity, making "need to" unnecessary.
(c) "**they needs to**" - This option introduces a subject-verb agreement error. "Needs" is singular, and it should be "need" to agree with the plural subject "they."
(d) "**they demanded for**" - This option introduces the word "demanded," which is too strong in this context and changes the meaning of the sentence.
(e) **No replacement required** - The original sentence is correct with the use of "they need to put on more hard work."
Therefore, the correct answer is (e) "**No replacement required**."

S30. Ans.(c)
Sol. The given highlighted phrase is incorrect as it does not convey the intended meaning and need to be replaced. A suitable replacement is needed.
(a) "**very vulnerable hence it**" - This option introduces the phrase "very vulnerable hence it," which is not contextually appropriate and does not fit the intended meaning of expressing dedication. Additionally, it changes the meaning of the sentence.
(b) "**clearly visible in his project**" - This option introduces a new phrase "clearly visible in his project," which changes the meaning and is not a suitable replacement for "perpetuate for a long."
(c) "**so immense as it reflects**" - This option introduces the phrase "so immense as it reflects," which changes the structure of the sentence and gives the meaningful sentence. After replacement the sentence will mention the high level of dedication is directly connected to and can be observed in the positive outcomes of the project, specifically in the quality and punctuality of the deliverables. The sentence conveys a positive association between the person's commitment and the successful results achieved in terms of the project's quality and timeliness.
(d) "**meeting all the deadlines**" - This option introduces a new phrase "meeting all the deadlines," which is not a suitable replacement for "perpetuate for a long." It changes the meaning of the sentence.
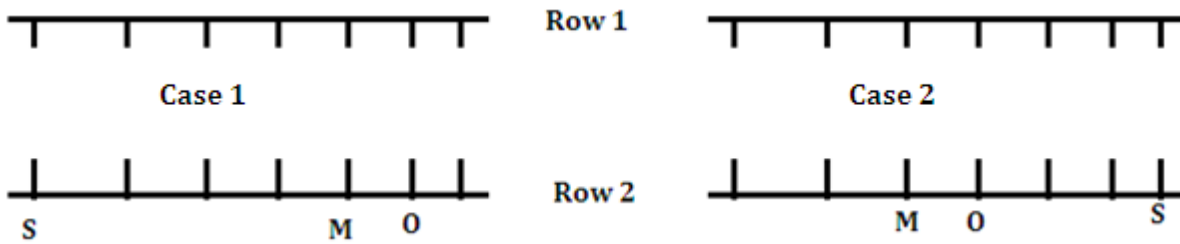Therefore, the correct answer is (c) "**so immense as it reflects**".

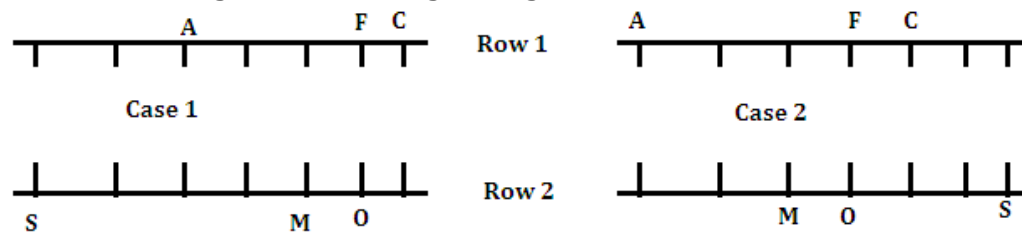## Solutions (31-35):
Final arrangement:

Clues: Three persons sit between S and M who faces north. S sits at the extreme end. O sits to the immediate right of M.

**Inference:** We have two possible cases:

Clues: The one who faces O sits third to the left of A. Two persons sit between A and F who sits to the immediate right of C.

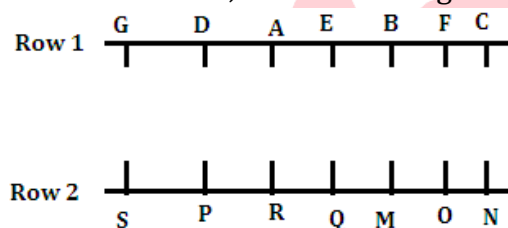**Inference:** We get the following arrangement

Clues: D is the only neighbour of G and faces P. P doesn't sit adjacent to A. Q sits second to the right of P. E sits adjacent to B who doesn't face Q.

Inference: Case 2 gets eliminated.
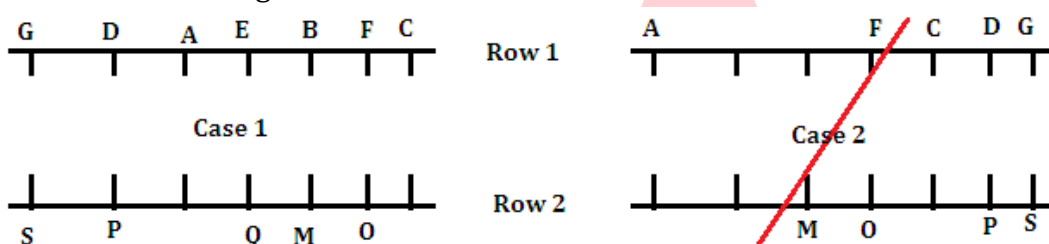
Clue: N sits to the right of R.

Inference: Thus, the final arrangement is:

S31. Ans.(b)
Sol. Four persons sit between P and N.

S32. Ans.(a)
Sol. Q faces the one who sits immediate right of B.

S33. Ans.(d)
Sol. All of them sit at the extreme end except Q.

S34. Ans.(e)
Sol. All I, II and III statements are true.

S35. Ans.(e)
Sol. M sits third to the right of P.

S36. Ans.(a)
Sol. I follow: Some part of Primer which are liner can't be blush because no liner is blushes.
II doesn't follow: No blushes are liner and all blushes are foundation. So, all foundation can't be liner even in possibility.
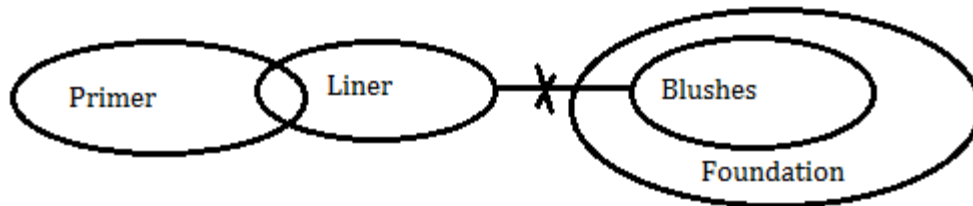
S37. Ans.(e)
**Sol.** I follow: Copies are only related to pens and with other elements, it has no relation even in possibility.
II follows: Copies are only related to pens So, some pens are definitely not pencils follows.
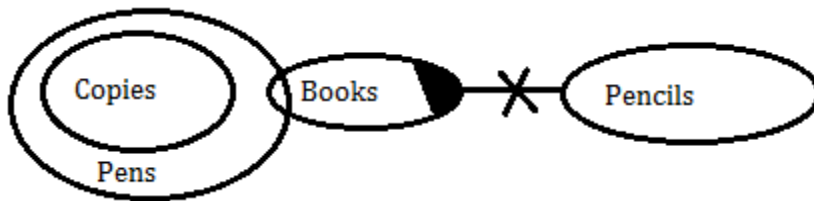
S38. Ans.(d)
Sol. I doesn't follow: No direct relation between ride and passengers. So, definite relation doesn't follow.
II doesn't follow: No direct relation between ride and passengers. So, definite relation doesn't follow.
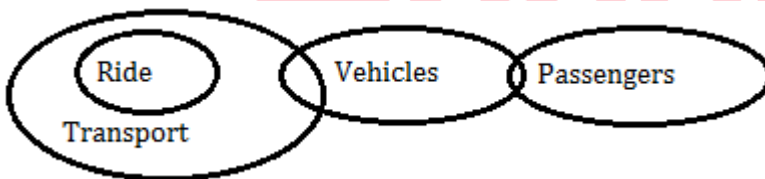
S39. Ans.(b)
Sol. I doesn't follow: No direct relation between the given elements. So, definite relation doesn't follow.
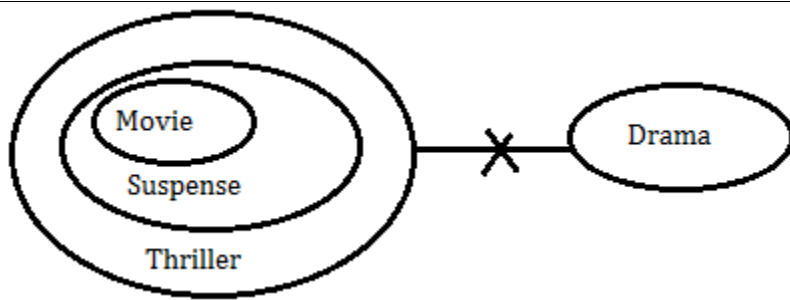II follows: Some part of snickers which is munch can't be kitkat.
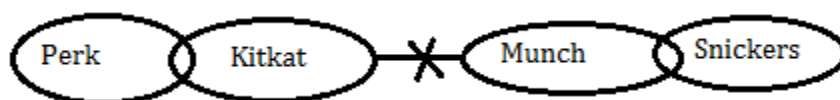
S40. Ans.(a)
Sol. I follow: All Movie are part of thriller and no thriller is drama. So, some movie is not drama follows.
II doesn't follow: All Movie are part of thriller and no thriller is drama. So, all movies can't be drama.

S41. Ans.(c)

Sol. Given words – DISAPPEARANCE

Word after removing all vowels – DSPPRNC

Now, replace all the consonants – CR**OO**QMB

Thus, there are two vowels

Solutions (42-46): Final arrangement:

Boxes
G
D
A
E
B
F
C
H

Clues: Only two boxes are kept below box F. One box is kept between box F and box E. As many boxes kept above box E as below box B.

Inference: We have two possible cases:

Case 1	Case 2
Boxes	**Boxes**
	B
E	
B	
F	F
	E

Clues: Box A is kept two boxes above box B. More than one box is kept between box C and box A. Box H is kept below box C.

Inference: Case 2 gets eliminated here.

Case 1	Case 2
Boxes	Boxes
	B
A	
E	
B	
F	F
C	
H	E

Clues: Box G is kept adjacent to box D but not kept adjacent to box A.

Inference: The final arrangement is:

Boxes
G
D
A
E
B
F
C
H

S42. Ans.(b)
Sol. Four boxes are kept between box D and box C.

S43. Ans.(c)
Sol. Statement given in option (c) is not true.

S44. Ans.(c)
Sol. If box G is related to box A, in the similar manner box D is related to box E then box B is related to box C.

S45. Ans.(e)
Sol. Box C is kept at second position from the bottommost position.

S46. Ans.(a)
Sol. Five boxes are kept below the box which is kept just above box E.

Solutions (47-48):
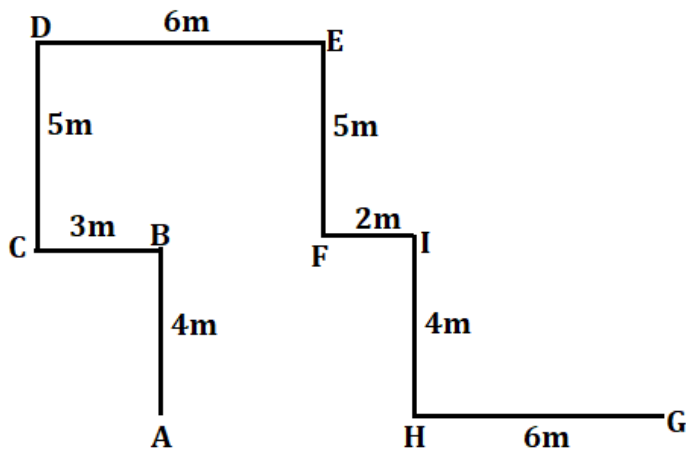
S47. Ans.(b)

Sol. Point D is in north-west of point F.

S48. Ans.(d)

Sol. Total distance from point C to point I is 18m.

S49. Ans.(d)

Sol. Final arrangement:

A (75) >M > D (52) > N > C (36) > F

Clues: Only one person gets more marks than M. Only two persons get marks between M and the one who gets 36 marks.

Inference: We have the following arrangement:

__ > M > __ > __ > (36) >__

Clues: N gets just lesser marks than D. C gets more marks than F but does not get the highest marks. D gets 16 marks more than C.

Inference: From the above conditions it is clear that D gets 52 marks.

__ > M > D (52) > N > C (36) > F

Clues: A gets 39 more marks than C.

Inference: Thus, the final arrangement is:

A (75) > M > D (52)> N > C (36)>F

Five persons get less marks than A.

S50. Ans.(b)

Sol. Given number: 4861952783

After arrangement: 9887654321

Sum- 7+6+3=16

Solutions (51-55): Final arrangement:

Days	Persons	Sports
Monday	V	Football
Tuesday	W	Chess
Wednesday	R	Hockey
Thursday	T	Cricket
Friday	S	Baseball
Saturday	Y	Volleyball
Sunday	U	Basketball

Clues: One person plays between R and S who plays Baseball. V plays two persons before R. S and the person who plays Volleyball is not the last person to play the match. One person plays between T and the person who plays Volleyball. Neither T nor the person who plays Volleyball plays on Tuesday. T does not play just after S. T neither plays on Monday nor on Wednesday.

Inference: From the above conditions there are two possibilities i.e., Case 1 and Case 2.

Days	Case 1		Case 2	
	Persons	Sports	Persons	Sports
Monday	V			
Tuesday			V	
Wednesday	R			Volleyball
Thursday	T		R	
Friday	S	Baseball	T	
Saturday		Volleyball	S	Baseball
Sunday				

Clues: Two persons play between U and the person who plays Cricket. R does not play Cricket.

Inference: From the above conditions Case 2 is cancelled here as there is no place for U and the person who plays Cricket.

Days	Case 1		~~Case 2~~	
	Persons	Sports	~~Persons~~	~~Sports~~
Monday	V			
Tuesday			~~V~~	
Wednesday	R			~~Volleyball~~
Thursday	T	Cricket	~~R~~	
Friday	S	Baseball	~~T~~	
Saturday		Volleyball	~~S~~	~~Baseball~~
Sunday	U			

Clues: The person who plays Hockey plays just after W. U does not play Hockey. W and V do not play Basketball. W does not play Football.

Inference: From the above conditions it is clear that V plays Football and U plays Basketball.

Days	Case 1	
	Persons	**Sports**
Monday	V	Football
Tuesday	W	
Wednesday	R	Hockey
Thursday	T	Cricket
Friday	S	Baseball
Saturday		Volleyball
Sunday	U	Basketball

Inference: Only one person remains i.e., Y and only one sports remain i.e., Chess. So, the Final arrangement is:

Days	Persons	Sports
Monday	V	Football
Tuesday	W	Chess
Wednesday	R	Hockey
Thursday	T	Cricket
Friday	S	Baseball
Saturday	Y	Volleyball
Sunday	U	Basketball

S51. Ans.(c)
Sol. The person who plays Volleyball i.e., Y plays on Saturday

S52. Ans.(b)
Sol. W plays the Chess

S53. Ans.(a)
Sol. One person plays between Y and the person who plays Cricket

S54. Ans.(c)
Sol. V is the first person to play the sport

S55. Ans.(e)
Sol. W plays on Tuesday
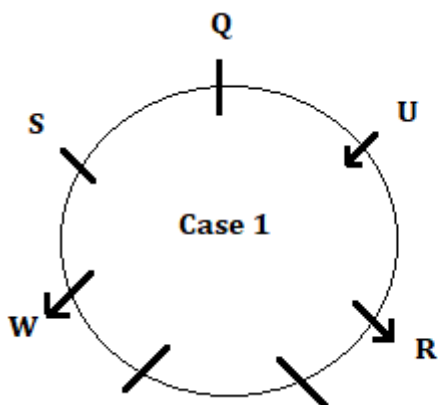
Solutions (56-60): Final arrangement-
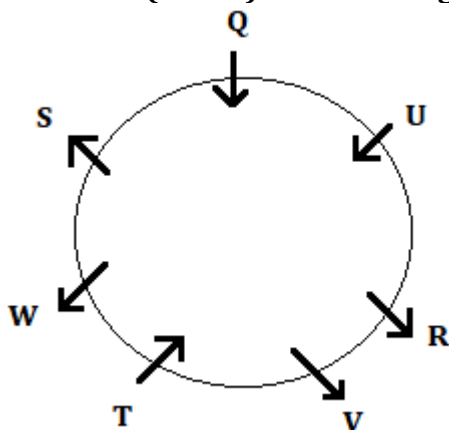
Clues-W sits 3rd to the right of R and both face the same direction.

Inference-Here we have 2 possible cases.
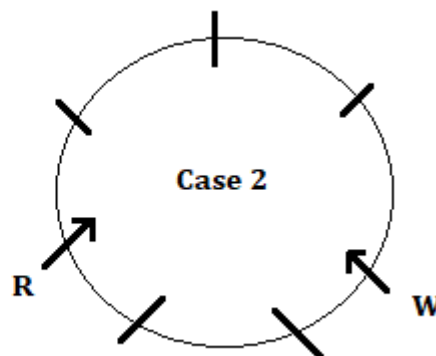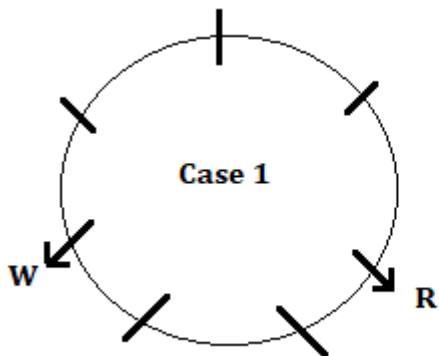
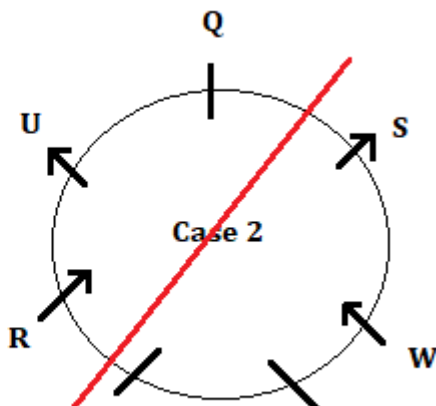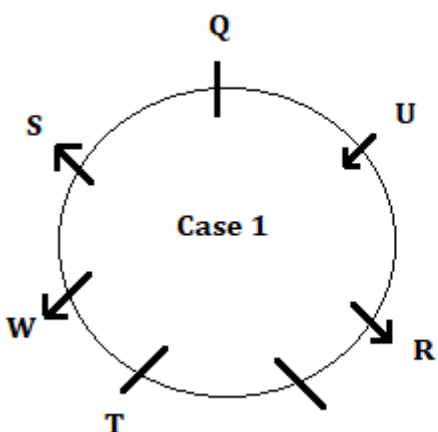**Clues-**Two persons sit between R and S.Q and W are not an immediate neighbour. Q sits just right of U but not near R.
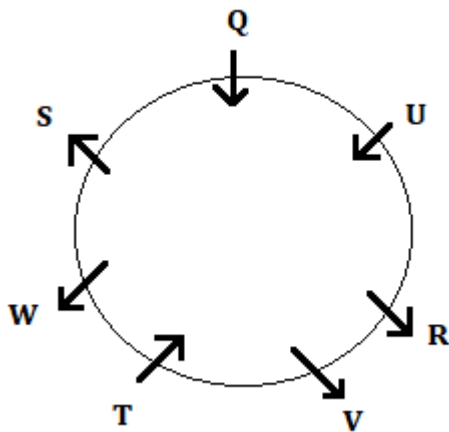
Inference-
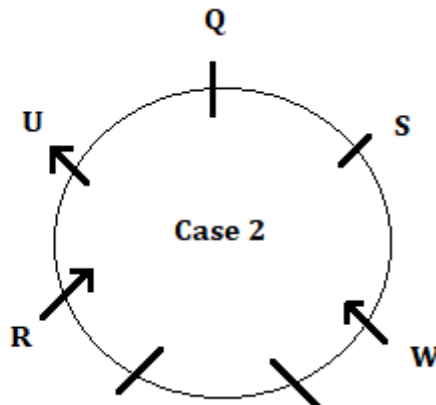
Clues-T sits 2nd to the left of S who face outside.

Inference-Here case 2 is ruled out because we can't place T.

Clues-T and Q face same direction. Not more than two neighbours face the same direction. V does not face inside.

Inference-So, T and Q must face inside because of the given condition and V faces outside. So, the final arrangement is-

S56. Ans.(d)
Sol. S sits 4th to the left of V

S57. Ans.(e)
Sol. Either one or four people sit between W and Q

S58. Ans.(a)
Sol. 1st person sits 2nd to the left of 2nd person so T sits 2nd to the left of S

S59. Ans.(c)
Sol. Both I and III statements are true

S60. Ans.(a)
Sol. All face outside except Q

Solutions (61-65): Final arrangement:

G < B < D < H < A < E < F < C
$200 $800 $400 $700 $600 $100 $500 $300

Explanation:
Clues:
Only G buys a product after the one who buys the most expensive product. Either two or three persons buy the product between G and A.
Inference:
From these clues, we get two possible cases: -

(Case 1) G <   <   < A <   <   <   <
          $800

(Case 2) G <   <   <   < A <   <   <
          $800

Clues:

H buys just after the one who buys a product for $600 and just before D who buys a product for $400. One person buys between the one who buys a product for $600 and F.

Inference:

Case 1 is cancelled here as per the condition we can't place F.

(Case 1) G <   <   < A <   <   <   <
          $800

(Case 2) G <   < D < H < A <   < F <
          $800 $400 $600

Clues:

Difference between the price of the product which E buys and the one who buys just before F is equal to the price of the product which G buys. The product price of F is $400 more than the product price of E. B buys after D. The price of the product which H buys is not for $500. Product price of C is 50% more than the product price of G.

Inference:

So, H will buy with $700 and the final arrangement is:

G < B < D < H < A < E < F < C
$200 $800 $400 $700 $600 $100 $500 $300

S61. Ans.(a)
Sol. Two persons buy a product between G and H.

S62. Ans.(c)
Sol. The cost of the product that E buys - $100.

S63. Ans.(e)
Sol. A buys the product for $600.

S64. Ans.(c)
Sol. Statement given in option (c) is true

S65. Ans.(b)
Sol. E buys the product for $100.
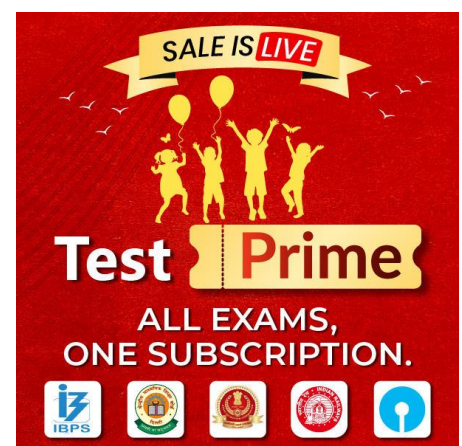
S66. Ans.(a)
Sol. Here the pattern is:
$6 \times 0.5 = 3$
$3 \times 1 = 3$
$3 \times 2 = 6$
$? = 6 \times 3 = $ **18**
$18 \times 4 = 72$

S67. Ans.(d)
Sol. Here the pattern is:
Addition of consecutive prime numbers
11+11 = 22
22+13 = 35
35+17 = 52
52+19 = 71
? = 71+23 = **94**

S68. Ans.(e)
Sol. Pattern of series –
$10 \times 5 + 5 = 55$
$55 \times 4 + 4 = 224$
? = $224 \times 3 + 3 = $ **675**
$675 \times 2 + 2 = 1352$
$1352 \times 1 + 1 = 1353$

S69. Ans.(d)
Sol. Pattern of series –
$5+11^2 = 126$
$126+12^2 = 270$
$270+13^2 = 439$
$439+14^2 = 635$
? = $635+15^2 = $ **860**

S70. Ans.(a)
Sol. Pattern of series –
$1221-9^3 = 492$
$492+8^3 = 1004$
$1004-7^3 = 661$
$661+6^3 = 877$
? = $877-5^3 = $ **752**

S71. Ans.(a)
Sol. $28 \times 5 + \frac{50}{100} \times 450 - 186 = ?$
$140 + 225 - 186 = ?$
$179 = ?$

S72. Ans.(b)
Sol. $\frac{25}{100} \times \frac{30}{100} \times 950 + 438 = ?$
71.25+438=?
509.25=?
? ≈ 509

S73. Ans.(d)
Sol. $(17)^2 + (20)^2 - 20 \times 6 = ?$
$289 + 400 - 20 \times 6 = ?$
$569 = ?$

S74. Ans.(e)
Sol. $(23)^2 - (15)^2 + (11)^2 = ?$
$529 - 225 + 121 = ?$
$425 = ?$

S75. Ans.(d)
Sol. $500 \div 25 \times 13 - 160 = ?^2$
$100 = ?^2$
$10 = ?$

S76. Ans.(b)
Sol. Let present age of B = 2n
So, present age of A = $2n \times \frac{150}{100} = 3n$
ATQ,
$\frac{3n-5}{2n+10} = \frac{1}{2}$
$6n - 10 = 2n + 10$
$4n = 20$
$n = 5$
Required sum = 3n + 2n = 5n = 25 years

S77. Ans.(e)
Sol. I. $x^2 + 3x + 2x + 6 = 0$
(x + 2) (x + 3) = 0
x = -3, -2
II. $y^2 + 4y + 3y + 12 = 0$
(y + 4) (y + 3) = 0
y = -4, -3
clearly, x ≥ y

S78. Ans.(c)
Sol. I. $2x^2 + 6x - x - 3 = 0$
(2x – 1) (x + 3) = 0
x = -3, $\frac{1}{2}$
II. $3y^2 - 3y + y - 1 = 0$
(3y + 1) (y – 1) = 0
$y = -\frac{1}{3}, 1$
Clearly, no relation

S79. Ans.(a)
Sol. from I & II
x = 2
y = 1
clearly, x > y

S80. Ans.(d)
Sol. I. $x^2 - 7x - 6x + 42 = 0$
(x – 7) (x – 6) = 0
x = 6, 7
II. $y^2 - 9y - 8y + 72 = 0$
(y – 9) (y – 8) = 0
y = 8, 9
clearly, x < y

S81. Ans.(e)
Sol. I. $x^2 + 6x + 8 = 0$
$x^2 + 2x + 4x + 8 = 0$
$(x + 4)(x + 2) = 0$
$x = -2, -4$
II. $y^2 + 10y + 24 = 0$
$y^2 + 6y + 4y + 24 = 0$
$(y + 4)(y + 6) = 0$
$y = -4, -6$
$So, x \geq y.$

S82. Ans.(a)
Sol. Total tickets booked in train D = 800
Total tickets booked in train E = 600
Required percentage = $\frac{800-600}{600} \times 100 = 33.33\%$

S83. Ans.(c)
Sol. Total tickets booked in sleeper class in trains B & C together
= (600 - 400) + (900 – 600) = =200+300=500
Required ratio = 500 : 500 = 1 : 1

S84. Ans.(d)
Sol. Total tickets booked in train F = (800 – 500) $\times \frac{250}{100} = 750$
Total AC class tickets booked in train F = $400 \times \frac{120}{100} = 480$
So, total sleeper class tickets booked in train F = 750 – 480 = 270

S85. Ans.(b)

Sol. Total sleeper class tickets booked in trains A, B & C = (800 – 500) + (600 – 400) + (900 – 600) = 300+200+300=800

Required average = $\frac{800}{3} = 266\frac{2}{3}$

S86. Ans.(b)

Sol. Total sleeper class tickets booked in train A = (800 – 500) = 300

Total sleeper class tickets booked in train D & E= (800 – 500) + (600 – 500) = 300+100=400

Required percentage = $\frac{300}{400} \times 100 = 75\%$

Solutions (87-91):

Companies	Number of male employees	Number of female employees	Total number of employees
P	120	$120 \times \frac{17}{12} = 170$	290
Q	75	$75 \times \frac{14}{15} = 70$	145
R	200	$200 \times \frac{9}{8} = 225$	425
S	100	$100 \times \frac{7}{10} = 70$	170
T	180	$180 \times \frac{11}{6} = 330$	510

S87. Ans.(b)

Sol. Required percentage = $\frac{330-100}{100} \times 100 = 230\%$

S88. Ans.(c)

Sol. Required average = $\frac{170+70+330}{3} = 190$

S89. Ans.(d)

Sol. Required difference = (180+120) −225 = 75

S90. Ans.(a)

Sol. Required ratio = $\frac{70}{100} = 7:10$

S91. Ans.(b)

Sol. Required percentage = $510 − (120 + 200) = 190$

S92. Ans.(b)

Sol. Let time taken by Babita alone to complete the whole work be $4x$ days

So, time taken by Seema alone complete the whole work = $4x \times \frac{125}{100} = 5x$ days

ATQ

$\frac{16}{4x} + \frac{16}{5x} = \frac{(100-10)}{100}$

$\frac{80+64}{20x} = \frac{9}{10}$

$20x = 160$

x = 8 days

Required difference= 5x- 4x = x = 8 days

S93. Ans.(c)

Sol. Let mark price of table = Rs. 100x

After discount of 40%, selling price $of\ table = \frac{100x \times 60}{100} = $ Rs. $60x$

Given, loss on selling table at 40% discount = 10%

Cost price of table = $\frac{60x}{90} \times 100 = $ Rs. $\frac{200}{3}x$ .... (i)

When table is sold at half discount, i.e. 20% discount, then:

Selling price of table = $\frac{100x \times 80}{100} = $ Rs. $80x$

Cost price of table = 80x – 60   ...(ii**)**

Comparing (i) & (ii):

$\frac{200x}{3} = 80x - 60$

x = 4.5 Rs.

Cost price of table = $\frac{200}{3} \times 4.5 = $ Rs. 300

So, required selling price = $300 \times \frac{125}{100} = 375\ Rs.$

S94. Ans.(b)

Sol. ATQ,

R% = $\frac{3rd\ year\ C.I.-\ 2nd\ year\ C.I.}{2nd\ year\ C.I} \times 100$

= $\frac{2880 - 2400}{2400} \times 100$

= $\frac{480}{2400} \times 100 = 20\%$

Now,

$\left[X \left(1 + \frac{R}{100} \right)^2 - X \right] - \left[\frac{X \times R \times 1}{100} \right] = 2400$

$X \left(1 + \frac{20}{100} \right)^2 - X - \frac{X \times 20}{100} = 2400$

X = 10000 Rs.

S95. Ans.(c)
Sol. let initially there were x members in the group
Actual average = $70 - 2 = 68\ kg$
$70(x + 1) = 68x + 78$
$x = 4$

S96. Ans.(c)
Sol. Let one day work of A, B & C be 'x , 'y' & 'z' units respectively
x + y = $\frac{1}{24}$ ----------- (i)
Given, x + y + z = $\frac{1}{20}$
Given, z = $\frac{x}{2}$
$\frac{3x}{2} + y = \frac{1}{20}$ ---------- (ii)
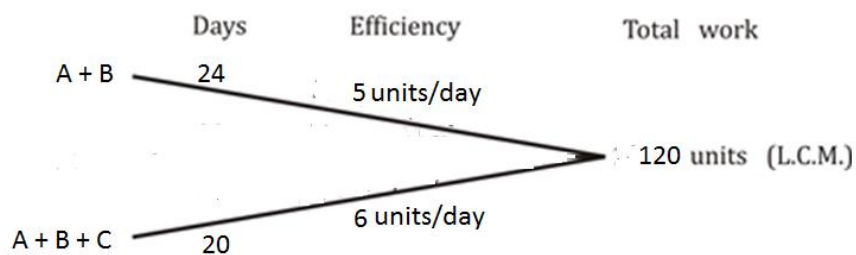From (i) & (ii) -
$\frac{x}{2} = \frac{1}{120}$
x = $\frac{1}{60}$
So A takes 60 days, B takes 40 days and C takes 120 days to complete the work individually
B & C together = $\frac{1}{40} + \frac{1}{120}$
= $\frac{3+1}{120} = \frac{1}{30}$
Hence, B & C together can complete the work in 30 days.
Alternate,

Days   Efficiency   Total work

A + B — 24

5 units/day

120 units (L.C.M.)

6 units/day

A + B + C — 20

Efficiency of C = 6 – 5 = 1 unit/day
So, efficiency of A and B are 2 units/day and 3 units/day respectively.
ATQ
Time taken by B & C together to complete the work = $\frac{120}{3+1} = 30$ days

S97. Ans.(b)
Sol. Let initial speed of the car = s kmph.
And initial time taken by the car to cover the distance = t hours.
So, Total Distance = $s \times t$ km.
ATQ,
$(s - 9)(t + 2) = (s + 5)\left(t - \frac{48}{60}\right)$
s-5t = 5 .....(i)

and,
st = (s-9) (t+2)
2s-9t = 18 ....(ii)
From eq(i) & eq(ii)
t=8 hours
and s= 45 kmph
so, required distance = $45 \times 8 = 360 \ km$.

S98. Ans.(e)
Sol. Given, total milk = 120 liter
Let 'x'% of mixture taken out
So, x% of 120 = 30
x = 25%
After first operation –
Milk in vessel = 90 liter
Water in vessel = 30 liter
After second operation –
Milk remain in vessel = $90 - 90 \times \frac{25}{100} = 67.5 \ liters$

Water remain in vessel = $30 - 30 \times \frac{25}{100} + 30 = 52.5 \ liters$

After third operation –
Milk remain in vessel = $67.5 - 67.5 \times \frac{25}{100} = 50.625$ liters

Water remain in vessel = $52.5 - 52.5 \times \frac{25}{100} + 30 = 69.375$ liters

Required ratio = $\frac{50.625}{69.375}$
= 27 : 37

S99. Ans.(b)
Sol. Let the speed of boat in still water be x km/h.
ATQ,
$\frac{20}{x-2} + \frac{20}{x+2} = \frac{75}{10}$
$20 \times \left(\frac{2x}{x^2-4}\right) = \frac{75}{10}$
$3x^2 - 16x - 12 = 0$
$x = 6, -\frac{2}{3}$
$x = 6$ km/h

S100. Ans.(d)
Sol. Let the other side of the rectangle be x cm.
$x = \sqrt{17^2 - 15^2} = 8 \ cm$
Area of rectangle = $8 \times 15 = 120 \ cm^2$