SBI PO Mains Previous Year Paper 2022

Directions (1-4): A number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input: 48724 87235 92846 38273 74635
Step I: 32608 56115 18724 24121 28515
Step II: 56115 28515 24121 32608 18724
Step III: 36 49 36 169 09 25 64 64 36 225
Step IV: 85 205 34 128 261
Step V: 16985 49205 4934 121128 81261
And step V is the last step of the arrangement. As per the above rule followed in the above steps, find out in each of the following questions the appropriate step for the given input:
Input: 28465 79784 63452 34867 93275

Q1. What is the difference between the lowest and the highest number in step II?
(a) 45322
(b) 31052
(c) 50890
(d) 50908
(e) None of these

Q2. Which of the following number is 2nd to the left of the number which is 3rd from the right end in step III?
(a) 121
(b) 25
(c) 81
(d) 36
(e) None of these

Q3. What is the product of the digits of 1st and last digit of the highest number in the final step?
(a) 54
(b) 12
(c) 36
(d) 8
(e) 9

Q4. Which of the following is the penultimate step?
(a) 128 16 122 09 117
(b) 7135 6632 310 160 127
(c)128 106 122 90 117
(d)351532 312 164 127
(e) None of these

Directions (5-9): Study the following information carefully and answer the given questions.

In a building there are certain number of floors each floor has two flats i.e.; flat A is to the west of flat B. U lives on an odd numbered floor but below 7th floor. T lives two floors below U. X lives to the south west of T but not just south west. Three floors gap between S and T. X and S lives in the same named flat. The number of floors between S and X is two more than the numbers of floor between S and R. No one lives to the east of R. J lives to the immediate north west of R. The number of floors below X is same as the number of floors above O who lives just above R floors. K lives two floors below O's flat. Only one floor gap between W and Q. W lives exactly between the S and U's floor. S and T didn't live on the adjacent floor. P lives to the north west of Q and lives on an even numbered floor. P and W live in different named flats. Q lives above S. W and U live in different named flat.

Q5. How many flats are there in the building?

(a) 26
(b) 24
(c) 22
(d) 20
(e) 18

Q6. Four of the following five are alike in a certain way and thus forms a group, then who among the following doesn't belong to that group?

(a) J
(b) P
(c) U
(d) S
(e)W

Q7. Which among the following statement(s) is/are true?

I. J lives on the topmost floor
II. 12 floors are there in the building
III. Even number of floors are between K and T
(a) Only I
(b) Only II
(c) Both I and II
(d) Both II and III
(e) All I, II and III

Q8. On which of the following floor does J live?

(a) 12th
(b) 10th
(c) 9th
(d) 7th
(e) 11th

Q9. Who among the following persons live to the south east of P?
(a) T
(b) U
(c) S
(d) W
(e) Both T and W

Directions (10-10): Dismissing four petitions challenging the collection of fine in cars when the drivers were found without a mask, the Delhi high court said it is mandatory to wear a mask in a private car even when the driver is alone in the car, as a vehicle is considered a public place. The high court said a mask acts as Suraksha Kavach, which would prevent the spread of the deadly virus.

Q10. Which of the following can be hypothesized from the above statement?
(I) People will follow the rules to wear mask even they are alone in car.
(II) Awareness among people will be spread as court has termed "Suraksha Kavach" to mask.
(III) Less car will be seen on the roads of Delhi after verdict of High Court.
(a) Only III
(b) Only I and II
(c) Only II and III
(d) Only II
(e) All I, II & III

Directions (11-13): Each of these questions is based on the given information:
X@Y means X is son of Y
X#Y means X is mother of Y
X$Y means X is spouse of Y
X%Y means X is daughter-in-law of Y
X*Y means X is sister of Y
X&Y means X is father of Y
X+Y means X is grandmother of Y
Statement: V$A+B, E&T, C#S*T, B@H%C$E

Q11. If 'K*B, N$K, M#N', then how is B's brother-in-law is related to V's son-in-law?
(a) Brother
(b) Son-in-law
(c) Grandson
(d) Father
(e) None of these

Q12. If R is niece of S, then what will come in blanks respectively?
R_W@P_Q*W
(a) +, %
(b) $, +
(c) $, #
(d) @, &
(e) %, #

Q13. If 'Z*H', then who among the following is sister-in-law of Z?
(a) T
(b) None of these
(c) S
(d) H
(e) B

Directions (14-15): Study the information carefully and answer the questions given below.
Five boxes are placed one above the other in a stack. Box A is placed adjacent to box D. Box E is placed above box C but not on the topmost position. Box D is not placed adjacent to box B. If box F is added to the stack, then the box F is placed below the box B. All the boxes contain different numbers of pencils in a consecutive multiple of 6 from bottom to top. Box A contains 36 pencils and does not place at odd numbered position when counts from the top. More than two boxes are placed above the box D. Total number of pencils is not more than 198. Neither box E nor box F is kept adjacent to box D.

Q14. What is the sum of the numbers of pencils of box E and box F?
(a) 54 pencils
(b) 48 pencils
(c) 42 pencils
(d) 60 pencils
(e) 72 pencils

Q15. How many boxes are placed between box D and box B?
(a) One
(b) Three
(c) Four
(d) Can't be determined
(e) Two

Directions (16-17): New Zealand on Thursday temporarily suspended entry for all travellers from India, including its own citizens, for about two weeks following a high number of positive coronavirus cases arriving from the South Asian country. The move comes after New Zealand recorded 23 new positive coronavirus cases at its border on Thursday, of which 17 were from India.

Q16. Which of the following can be inferred from the given statement?
(I) Government of New Zealand is aware and cautious for coronavirus cases.
(II) Huge vaccination drive has been launched by Government of India.
(III) India is among top 3 countries in world for positive cases of coronavirus.
(a) Only II and III
(b) Only I and III
(c) Only II
(d) Only I
(e) All I, II and III

Q17. What may be the repercussions after precautionary step of New Zealand?
(I) India will also suspend the flights coming from New Zealand on temporary basis.
(II) India will ban the export and import from New Zealand.
(III) New Zealand will feel safe after temporary suspension.
(a) Only I and II
(b) Only III
(c) Only II and III
(d) Only I and III
(e) All I, II and III

Directions (18-21): Read the given information carefully and answer the related questions:
Six persons A, B, C, D, E and F stand in a row in the same order from right to left. Three of them face south and three face north direction. Consecutive distance between any two persons is 8m. They all start walking either in north or south direction, covering some certain distances, then reach their final positions.
A walks 14m in a certain direction and then turns right and walks 20m to reach his final position. C walks 10m in certain direction and then turns left and walks 6m to reach his final destination. E walks 6m in a certain direction and then turns left and walks 8m to reach his final position. F walks 8m in certain direction and then turns left and walks 22m to reach his final position. D walks 16m in a certain direction and then turns right and walks 6m to reach his final position. B walks 12m north and then turns left and walks certain meter to reach his final position which is in the south of D's final position. C's final destination is not in south-east of F's final destination.

Q18. Find the direction of D's final position with respect to A's final position.
(a) North-east
(b) North
(c) South-west
(d) None of these
(e) South-east

Q19. Who walks 2nd highest distance among all persons?
(a) A
(b) C
(c) B
(d) None of these
(e) F

Q20. E's initial position is in which direction of B's final position?
(a) North-east
(b) South
(c) South-west
(d) None of these
(e) South-east

Q21. Find the difference between the distance walked by C and F.
(a) 10m
(b) 12m
(c) None of these
(d) 14m
(e) 8m

Directions (22-24): Each of the questions below, consist of a question and three statements numbered I, II and III. You have to decide whether the data provided in the statements are sufficient to answer the question. Read the three statements and Give answer

Q22. A certain number of persons sit in line facing north. Then, how many persons sit between P and C?
Statement I: K sits second to the right of B. Two persons sit between K and P. Only one person sits between B and T.
Statement II: N is the only person sits to the right of P. The number of persons sits between K and N is one more than the number of persons sits between D and T.
Statement III: F sits adjacent to D who sits fourth to the right of C.
(a) If the data in statement I and II together are sufficient to answer the question, while the data in statement III are not required to answer the question.
(b) If the data in all the statements, I, II and III even together are not sufficient to answer the question.
(c) If the data in statement II and III are sufficient to answer the question, while the data in statement I are not required to answer the question.
(d) If the data in all three statements I, II and III together are necessary to answer the question.
(e) If the data in statement I and III together are sufficient to answer the question, while the data in statement II are not required to answer the question

Q23. Eight cars are parked at different directions with respect to each other. At which direction is car F is parked with respect to car C?
Statement I: Car A is parked in the north of car B which is parked in the south of car C. Car E is parked in the east of car C.
Statement II: Car D is parked in the south west of car A which is parked in the north west of car G. Car F is in the north east of car E.
Statement III: Car G is parked in the north of car E and to the west of car F. Car C is parked in the south of car A.
(a) If the data in statement I and II together are sufficient to answer the question, while the data in statement III are not required to answer the question.
(b) If the data in all the statements, I, II and III even together are not sufficient to answer the question.
(c) If the data in statement II and III are sufficient to answer the question, while the data in statement I are not required to answer the question.
(d) If the data in all three statements I, II and III together are necessary to answer the question.
(e) If the data in statement I and III together are sufficient to answer the question, while the data in statement II are not required to answer the question

Q24. In a family of nine members. How N is related to J?
Statement I: P is spouse of J who has only two children. K is grandchild of P. V is the sister-in-law of B.
Statement II: B is the only son of J. L has no siblings. K is nephew of R and brother-in-law of V
Statement III: L is sister-in-law of R. R is the only sibling of B. C is brother-in-law of B. N is niece of R.
(a) If the data in statement I and II together are sufficient to answer the question, while the data in statement III are not required to answer the question.
(b) If the data in all the statements, I, II and III even together are not sufficient to answer the question.
(c) If the data in statement II and III are sufficient to answer the question, while the data in statement I are not required to answer the question.
(d) If the data in all three statements I, II and III together are necessary to answer the question.
(e) If the data in statement I and III together are sufficient to answer the question, while the data in statement II are not required to answer the question

Directions (25-29): Study the information carefully and answer the questions given below.
Seven friends - P, Q, R, S, T, U, and V - went to attend a cooking class for a week from Monday to Sunday, not necessarily in the same order. Each person prepared a different number of dishes during these classes.
Q prepared the most dishes. The person who prepared the least dishes attended immediately after R.S prepared the 2ndmost dishes and attended on Sunday. T and the person who prepared the second-most dishes attended on consecutive days. Q prepared 5 dishes more than T who prepared 6 dishes more than P. P attended the classes immediately after the person who prepared 9 dishes. The person who prepared 10 dishes attended immediately before the person who prepared 8 dishes. Q attended on Wednesday, while V attended on Friday. There were 2 people between R and the person who prepared 6 dishes. Only One person prepared half number of dishes than the other one.

Q25. Who attended the cooking class on Thursday?
(a) P
(b)U
(c) R
(d) S
(e) T

Q26. Who prepared the least number of dishes?
(a) P
(b) V
(c) R
(d) None of these
(e) T

Q27. Who attended the cooking class on two days after P?
(a) S
(b) Q
(c) R
(d)U
(e) T

Q28. Four of the following five are alike in a certain way and hence form a group. Which of the following does not belong to that group?
(a) S
(b) P
(c) T
(d) V
(e) R

Q29. How many persons attend class between P and the one who prepared the 2nd most dishes?
(a) 4
(b) 2
(c) 3
(d) 1
(e) None of these

Directions (30-32): In the following questions, the symbols- &, @, % and $ are used with the following meanings as illustrated below. In each of the questions given below statements are 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 regarding commonly known facts.
A@B means "All A are B"
A&B means "Only a few A are B"
A$B means "No A is B"
A%B means "Some A is B"

Q30.
Statement:
Q%K@J&L$R@P
Conclusions:
I. Some K being not R is a possibility
II. All J can be R
III. All Q being L is a possibility
IV. All K can never be R
(a) Both III and IV
(b) Only I
(c) Both I and III
(d) Only IV
(e) Only III

Q31.
Statement:
M%R@O&N&P$S
Conclusions:
I. Some O are definitely not N
II. All N being S is not a possibility
III. Some M being O is a possibility
IV. All P can never be R

(a) Both I and II
(b) Only I
(c) Both II and III
(d) Only IV
(e) Only III

Q32.
Statement:
C$E%G@B&D
Conclusions:
I. All B being D is a possibility
II. Some B being C is not a possibility
III. All G can never be C
IV. All D can be E
(a) Both III and IV
(b) Only I
(c) Both II and III
(d) Only IV
(e) Only III

Directions (33-37): Read the given information carefully and answer the questions based on it:
Some boxes are placed one above other in three stacks C, K and T (west to east in same order). None of the stack contains more than six boxes. Two boxes are placed below box D. Box Y is not in the same stack of box D. Box W is in the west of box Y but not in stack K. Box L is placed three places above box W. Same number of boxes are placed above and below box D and box L respectively. Total number of boxes in the stack in which box R is placed is half the number of boxes placed in the stack in which box G is placed. Only box J is placed just above box R. Box U is in immediate north-east of box F which is in the west of box J. Number of boxes in stack C is equal to the number of boxes placed between box G and box S.
The boxes in each stack contains some number of pencils. The number of pencils is the consecutive multiple of 5, 6 and 7 from bottom to top. Now, some new boxes are entered in these stacks. Box M is in the south-west of box P and contains 21 pencils. The number of pencils in topmost box of stack C is 7/3 of the number of pencils in lowermost box of stack T. Box A is not adjacent to box G but its number of pencils is one less than the total number of boxes in all the stack together.

Q33. What is the total number of pencils in the boxes which are placed 3rd from bottom in each stack?
(a) 78
(b) 60
(c) 53
(d) 71
(e) None of these

Q34. Which of the following box contains 6th highest number of pencils and placed in which stack?
(a) Box J, stack T
(b) Box F, stack C
(c) Box U, stack T
(d) Box P, stack K
(e) Box U, stack K

Q35. How many boxes are placed in the stack where the number of pencils in each box is multiple of 6?
(a) Six
(b) Five
(c) Four
(d) Three
(e) None of these

Q36. Which of the following statement is true?
(a) Box A and box D are not in the same stack
(b) The box placed immediate below box R contains more pencils than box F
(c) No box is placed in east of box P
(d) Five boxes are placed in stack C
(e) Box U is placed above box Y in same stack

Q37. Which of the following box is not placed in the same stack of box M?
(a) The box contains 14 pencils
(b) The box which is north-west of box D
(c) The box which is two boxes below box F
(d) The box which is placed in the stack containing least number of boxes
(e) The box which is 4^{th} from bottom but in the stack of box U

Directions (38-40): Study the information carefully and answer the questions given below.
Rohit is standing at point A and wants to reach point E. He can only move in a straight line, but there are obstacles in his path. Rohit first moves 4 km towards the north and reaches point B. From there, he turns left and moves 3 km towards the west and reaches point C. He then turns left again and moves 5 km towards the south and reaches point D. Finally, he turns right and moves 8 km and reaches point E. Sonia wants to travel from point E to point A, but there is an additional obstacle in her path. There is a mountain between points E and A, which she cannot cross. Sonia first moves 5 km towards the south from point E and reaches point F. From there, she turns right and moves 6 km and reaches point G. She then turns left and moves 7 km towards the south and reaches point H. Finally, she turns right and moves 3 km and reaches point I. From point I, Sonia needs to reach point A, with shortest distance.

Q38. What is the total distance Rohit needs to travel from point A to point G?
(a) 29 km
(b) 31 km
(c) 34 km
(d) 36 km
(e) 38 km

Q39. What is the shortest distance between point A and point I?
(a) 26km
(b) $\sqrt{469}$km
(c) 24km
(d) $\sqrt{569}$km
(e) None of these

Q40. If Kavita is in north of point G and west of point A then in which direction is she with respect to point D?

(a) North-east
(b) South
(c) North-west
(d) South-east
(e) South-west

Q41. Subsequent terms in all the given three number series should follow the pattern "1 more than the square of consecutive odd numbers".

A: 32, 82, 164, 286, 456, 682
B: 140, 166, 216, 338, 508, 798
C: 400, 410, 435, 485, 567, 689

Which of the following series does not follow the pattern?

(a) Only C
(b) Only A
(c) Both A and C
(d) Both B and C
(e) None of these

Directions (42-43): Given below three series I, II & III and each series has a wrong number. The number that should come in place of wrong number in series I, II & III is a, b & c respectively.

I. 5, 6, 8, 14, 38, 168, 878, 5918
II. 32, 544, 593, 809, 832, 898, 907
III. 18, 38, 124, 500, 2504, 15028, 105200

Q42.

If $m^2 = \sqrt{a + 98}$, then which of the following statement/s is or are true.

(A) $(\frac{b}{m} + 0.5)$ = resultant is an integer.
(B) 10m = c
(C) $m + \frac{(b-42)}{18} \geq c$

(a) Only (A) and (C)
(b) Only (B) and (C)
(c) Only (A) and (B)
(d) All three
(e) Only C

Q43. If y is two times of the highest root of equation $n^2 - cn + (2.5a - 11)$, then which of the following option/s is true.

(a) $(y - c) = 2^3$
(b) Value of $\frac{b}{y}$ is more than 16.
(c) Value of $\frac{a}{y}$ is an integer
(d) None of these
(e) Both (a) and (b)

Directions (44-45): Read the following quadric equation carefully and answer the questions given below.

Equation 1: $a^2 - 7a + d = 0$

Equation 2: $b^2 - 4b + (d-9) = 0$

Note: Roots of the equation 1 are 'x' and 'y' and the roots of equation 2 are 'x' and 'y – x'.

Q44. If we multiply equation 2 by 3^z and add 1 in the smallest root of the equation newly formed, then find the resultant number?

(a) 4
(b) 3
(c) 2
(d) 0
(e) None of the above

Q45. Find the value of $(d - 8)^y$.

(a) 49
(b) 125
(c) 36
(d) 81
(e) 256

Directions (46-47): Read the following quadric equation carefully and answer the questions given below.

Equation 1: $ax^2 + bx + c = 0$

Equation 2: $dy^2 + ey + c = 0$

Note:

(i) c is a single digit prime number greater than 2
(ii) d and b are two digits prime number less than 20
(iii) d is greater than 11
(iv) b is greater than d
(v) Smallest roots of both the equation are same
(vi) No root is irrational
(vii) e = b + 1
(viii) 3c is greater than b

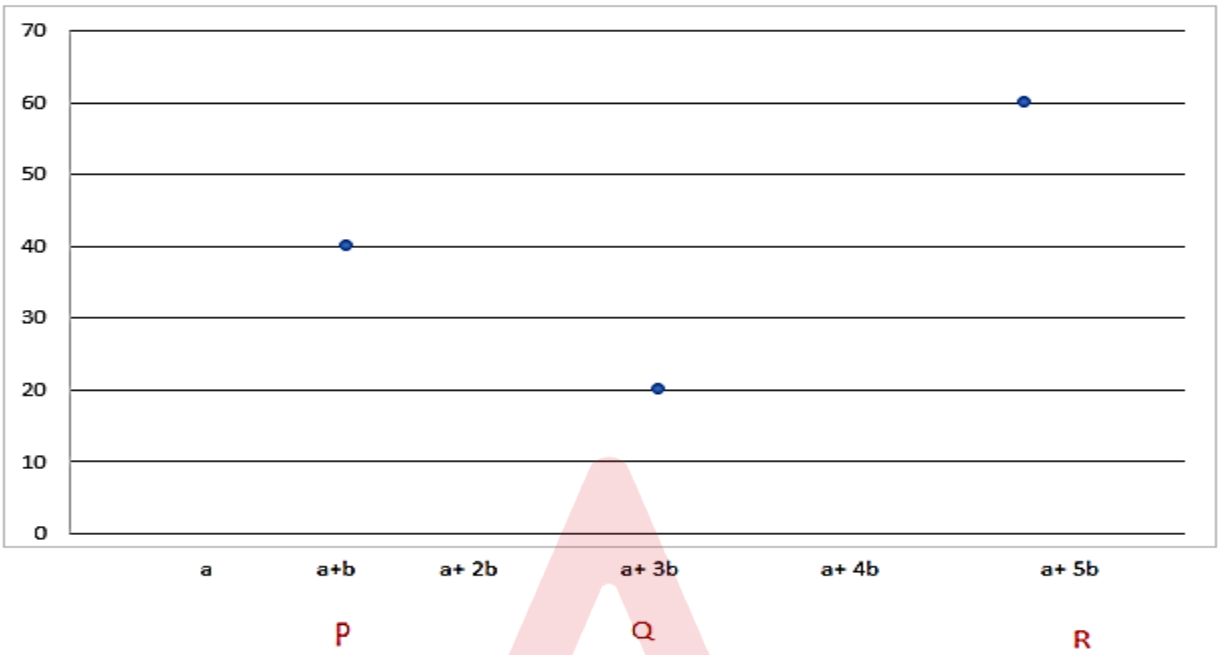
Q46. Find the value of 'a'.

(a) 13
(b) 14
(c) 12
(d) 10
(e) 15

Q47. Find the value of 'd× e'.

(a) 190
(b) 196
(c) 225
(d) 250
(e) 260

Directions (48-51): The scatter chart given below shows the number of boys on (Y – axis) and number of girls (X – axis) in three different class of P, Q and R.
NOTE: If there were 10 more girls in class R then the probability of selecting a girl from R would be 40%



Q48. Number of girls in class Q is 200/3 % the number of girls in class R. If the number of boys in class S is 20% more than the boys in class Q and the number of girls are same as that of Q, then find the probability of selecting two girls from class S.

(a) $\frac{37}{247}$
(b) $\frac{95}{473}$
(c) $\frac{33}{473}$
(d) $\frac{35}{214}$
(e) $\frac{37}{213}$

Q49. If the number of girls in class P is 25% of the number of boys in the class P, then find the difference between the total students in class P and Q.

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

Q50. If $11\frac{1}{9}\%$ of students in class R opt science stream and the ratio of boys and girls is 7:3 and the girls who opt science stream in class R is $16\frac{2}{3}\%$ of total girls in Q, then find the total number of student in class Q.

(a) 27
(b) 30
(c) 25
(d) 38
(e) 35

Q51. Number of girls in class P is 40% of the number of girls in R. If a teacher wants to make a two groups (A and B) from class R and P respectively such that in group A two girls and one boy are selected and in group B two girls and one boy are slected. Find the difference between the number of ways he can make such group from each class.

(a) 20760
(b) 22350
(c) 21350
(d) 22560
(e) 23460

Directions (52-54): Read the paragraph carefully and answer the questions given below :

Rahul and Ram have sold some wooden and plastic toys. Selling price of each wooden toy sold by Rahul and Ram is equal and total number of toys sold by Ram is 100. Selling price of each plastic toy sold by ram and rahul is equal and the selling price of each wooden toy is two times the selling price of each plastic toy. Number of plastic toys sold by Rahul is 37.5% of the wooden toys sold by him. Number of wooden toys sold by Rahul is $66\frac{2}{3}\%$ that of toys sold by Ram. Number of plastic toys sold by Ram is equal to the number of wooden toys sold by Rahul.

Q52. Number of plastic toys sold by both is what percentage more/less than the wooden toys sold by both.

(a) 45%
(b) 38%
(c) 40%
(d) 50%
(e) 48%

Q53. If the selling price of each wooden toys sold is Rs 120, then find the difference between the revenue of Rahul to the revenue of Ram by selling both types of toys (Note: Ram & Rahul sold all the plastic & wooden toys).

(a) Rs. 3500
(b) Rs. 4900
(c) Rs. 3900
(d) Rs. 3000
(e) Rs. 5000

Q54. Find the ratio of the wooden toys sold by Rahul to the wooden toys sold by Ram.
(a) 3:2
(b) 5:3
(c) 1:1
(d) 2:5
(e) 2:3

Directions (55-57): Read the following table carefully and answer the questions given below.
In the table some numbers are given and the probability of picking that number is given.

NUMBERS	Probability
Q	$\frac{1}{6}$
2.5	$\frac{1}{3}$
Q – 2.5	$\frac{1}{3}$
P	$\frac{1}{6}$
$\frac{4Q-5}{2}$	$\frac{1}{6}$
18.75	$\frac{1}{6}$

Q55. If the series 'Q, 2.5, Q – 2.5, P, $\frac{4Q-5}{2}$, 18.75' follows a certain pattern, then find the value of P.
(a) 3.5
(b) 3.75
(c) 4
(d) 5
(e) 2.75

Q56. If R = 5Q – 20, then find the value of R.
(a) 3
(b) 8
(c) 4
(d) 5
(e) 2

Q57. If the average of all the numbers in the box is 7, then find the value of $\frac{4P-3}{5}$.
(a) 7
(b) 4
(c) 9
(d) 2
(e) 1

Directions (58-60): Read the information carefully and answer the following question given below.
A right circular cylindrical vessel was filled with milk and water in the ratio 4: 5. If x ml of mixture was sold and replaced with x ml of pure milk , then the ratio of milk to water in the final mixture becomes 57: 60. The quantity of mixture sold is 108 ml less than the initial quantity of mixture in the vessel.

Q58. If 3x ml mixture was sold and $\frac{x}{3}$ ml of milk & 2x ml of water is added in the vessel, then how much volume of vessel is filled in cm cube?
(a) 113
(b) 111
(c) 130
(d) 125
(e) 120

Q59. Find the quantity of milk in the final mixture.
(a) 59 ml
(b) 36 ml
(c) 57 ml
(d) 67 ml
(e) 89 ml

Q60. If the radius of vessel is 0.7 cm and 37 cm^3 of the vessel is empty, then find the height of the vessel.
(a) 150 cm
(b) 200 cm
(c) 100 cm
(d) 130 cm
(e) 195 cm

Directions (61-63): The following questions are accompanied by two statements i.e. statement (I) and statement (II). You have to determine which statement (s) is/are sufficient/necessary to answer the questions.

Q61. Rahul invested in a bank at a rate of R% compound annually for t years. Find the value of t?
Statement (I): Raj invested Rs. 10,000 in scheme A at a rate of R% at a simple interest for 3 years then he gets Rs. 3000 as an interest.
Statement (II): If Rahul invested certain amount at a compound interest for t years at the rate of X%, then he gets Rs.1900 less interest than the interest he got when he invested same amount at simple interest at same rate for 4 years.
(a) Neither statement (I) nor statement (II) by itself is sufficient to answer the question.
(b) Statement (II) alone is sufficient to answer the question but statement (I) alone is not sufficient to answer the question.
(c) Either statement (I) or statement (II) by itself is sufficient to answer the question.
(d) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
(e) Statement (I) alone is sufficient to answer the question but statement (II) alone is not sufficient to answer the questions

Q62. The ratio of the efficiency of A to B to do a certain work is 5: 2 respectively. A takes X hour to complete the work and C destroys the work in X + 5 hour. If all them started doing the work at 7 a.m. and completed the work at 1 p.m. & C works only for A hours, then find the time taken by C alone to destroy the completed work completely.

Statement (I): A can do the $8/9^{th}$ of the work in 16 hrs.

Statement (II): Efficiency of B to C is 5:1.

(a) Neither statement (I) nor statement (II) by itself is sufficient to answer the question.

(b) Statement (II) alone is sufficient to answer the question but statement (I) alone is not sufficient to answer the question.

(c) Either statement (I) or statement (II) by itself is sufficient to answer the question.

(d) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.

(e) Statement (I) alone is sufficient to answer the question but statement (II) alone is not sufficient to answer the questions

Q63. Two equations are given below

(i) : $\sqrt[b]{A^b} \times (C + 1) = 24$ (C is the largest even prime number)

(ii) : $(A + X - Y)^2 = 49$

Find the sum of A, X and Y

Statement (I) : Roots of the equation $Xm^3 + Ym^2 - 2m - 3 = 0$ are (m-1) and (m+1)

Statement (II) : A = Y + 5, 3X + A = 14

(a) Neither statement (I) nor statement (II) by itself is sufficient to answer the question.

(b) Statement (II) alone is sufficient to answer the question but statement (I) alone is not sufficient to answer the question.

(c) Either statement (I) or statement (II) by itself is sufficient to answer the question.

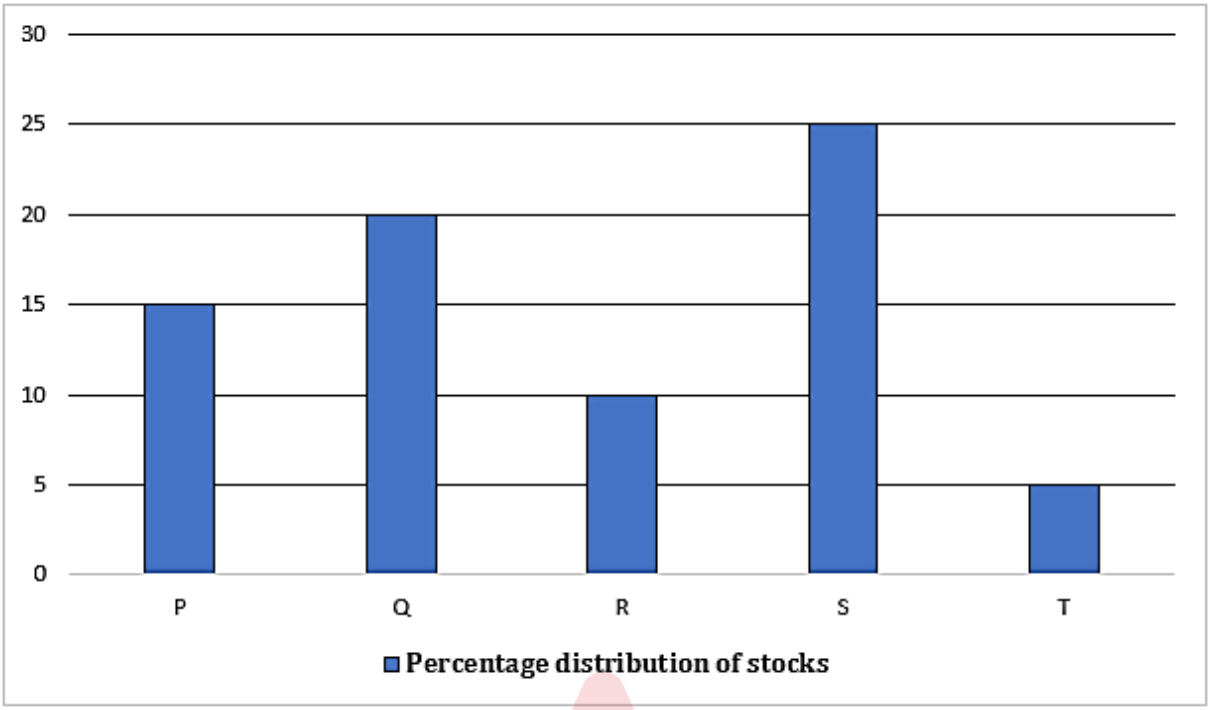
(d) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.

(e) Statement (I) alone is sufficient to answer the question but statement (II) alone is not sufficient to answer the questions

Directions (64-66): Read the following bar graph and the table carefully and answer the given question:

The bar graph shows the percentage distribution of the stocks sold by Ram to six different people(P, Q, R, S, T and U). Total stock value of Ram is Rs. 3,60,000. Table shows the percentage increment in the price of stocks in two years and the overall percentage increment in the price of stocks. Ram earned some return amount from the each person on the increased price.

Note: % increase in Price = % of the return



Person	% increment in 1st year	% increment in 2nd year	% of Overall increment
P	---------	---------	21
Q	---------	---------	69
R	---------	---------	56.25
S	20	---------	44
T	---------	---------	82.25
U	---------	---------	32.25

Q64. If the percentage increment for both the years are same for T and S, then find the return from T & S when calulated after 1 year.

(a) Rs. 24,300

(b) Rs. 24,600

(c) Rs. 25,300

(d) Rs. 20,000

(e) None of these

Q65. If the percentage increment for Q is same for both the years, then find the difference between the return from Q after 1st year and return from after 2nd year.

(a) Rs. 20,080

(b) Rs. 27,070

(c) Rs. 28,080

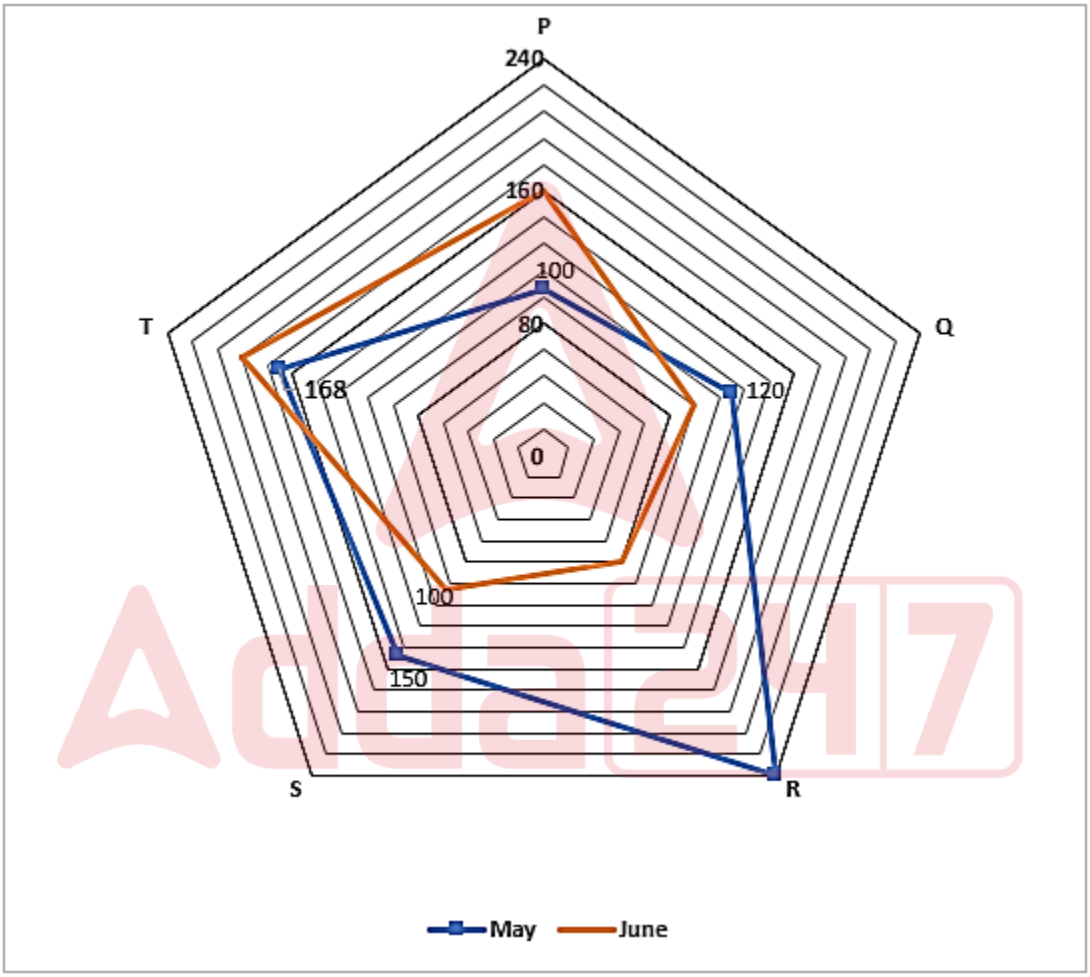
(d) Rs. 25,000

(e) None of these

Q66. Ram invested the amount which he recieved as a return after two years from P and S together at compound interest for two years at the rate of 20% p.a. Find the interest recieved after two years.

(a) Rs. 22021.5
(b) Rs. 23013.2
(c) Rs. 22000.4
(d) Rs. 22413.6
(e) None of these

Directions (67-69): The radar graph given below shows the number of buckets (plastic + wooden) sold by five different shops (P, Q, R, S and T) in two different months (May and June). Read the data carefully and answer the questions.



Q67. In May, if total wooden buckets sold by R was 200% more than total number wooden buckets sold by S in May and total number of plastic buckets sold by R in May are more than total plastic bucket sold by S in May, then which of the following option cannot be the number of plastic buckets by R in May.

(a) 90
(b) 117
(c) 96
(d) 120
(e) Both (a) and (c)

Q68. 40% of total buckets sold by P in June are plastic buckets and 1/8 th of total plastic buckets sold by P are defective. If 25% of total wooden buckets sold by P in June are also defective and total wooden buckets sold by Q in June are 50% more than the difference between total plastic and wooden buckets sold by P in June which are not defective, then find total plastic buckets sold by Q in June are what percent of total buckets sold by Q in May.
(a) 50%
(b) 60%
(c) 66.66%
(d) 33.33%
(e) 30%

Q69. In May, if total number of plastic buckets sold by T are four times of the difference between total number of buckets sold by Q in both months, then find the minimum possible average of total wooden buckets sold by T in May and total plastic buckets sold by T in June (Given, number of wooden buckets sold by T in June > total wooden buckets sold by T in May and it also a perfect square of even number).
(a) 90
(b) 82
(c) 60
(d) 80
(e) 72

Q70. Three trains T1, T2 and T3 leaves station X for station Y in equal time intervals, when three trains reach station Y simultaneously and then they leave for station Z, which is 480 km away from station Y. T1 reach station Z two hours after T2 and T3 turns back immediately towards station Y after reaching station Z. T1 and T3 meet a point O, which is 160 km away from station Z and the difference between speed of T1 & T3 is V km/hr. Find the time (in minutes) taken by T3 to reach point O from station Y.
(a) 144
(b) 240
(c) 120
(d) 180
(e) 160

Directions (71-78): Read the passage given below and answer the following questions.
Information technology has revolutionized the modern world, transforming how individuals and organizations communicate, learn, work, and entertain themselves. From the internet and mobile devices to cloud computing and artificial intelligence, IT has transformed virtually every aspect of human activity. As such, it has created new opportunities and challenges, raising questions about privacy, security, intellectual property, and the digital divide. One of the most significant implications of IT is its impact on the way we communicate and access information. With the advent of the internet and social media, individuals can now connect with others, share their ideas, and access vast amounts of information from anywhere in the world. This has empowered individuals, democratized knowledge, and enabled new forms of collaboration and innovation. However, it has also created new risks, such as the spread of misinformation, cyberbullying, and online harassment.

Another key implication of IT is its impact on the economy and the nature of work. With the rise of automation and artificial intelligence, many jobs are becoming redundant, while new ones are emerging. This has led to a widening skills gap and increased demand for digital skills. Moreover, the growing use of freelancers and remote work has **blurred** the boundaries of traditional employment, raising questions about labor rights and the gig economy. As such, policymakers and businesses must work together to ensure that IT creates inclusive, equitable, and sustainable economic opportunities for all. With the internet and various software tools, we can now access and process vast amounts of data quickly and efficiently. This has led to improvements in areas such as healthcare, education, and business. For example, doctors can now access patient data remotely and collaborate with specialists from around the world, while businesses can use data analytics to optimize their operations and reach new customers.
However, with the benefits come concerns. One of the biggest challenges is data privacy and security. As more and more personal information is stored and shared online, the risk of data breaches and identity theft also increases. In addition, there are concerns about the impact of technology on jobs and the economy. As automation and artificial intelligence become more prevalent, there is a risk of job displacement and a widening income gap between those who possess the necessary skills and those who do not. In addition to its impact on communication and information access, information technology has also transformed the business landscape. From e-commerce to supply chain management, digital technology has revolutionized how companies operate and interact with customers. By leveraging data analytics and machine learning algorithms, businesses can now make data-driven decisions, personalize customer experiences, and optimize their operations for maximum efficiency.

Q71. What are some of the concerns regarding the impact of IT on the economy and jobs?
(i) IT may create a wider income gap between skilled and unskilled workers.
(ii) IT may lead to the displacement of jobs due to automation and artificial intelligence.
(iii) IT may create a skills gap and a demand for digital skills.
(a) Only (i) and (ii)
(b) Only (iii)
(c) Only (i) and (iii)
(d) All of these
(e) Only (ii) and (iii)

Q72. What is/are the potential benefit(s) of IT in healthcare?
(a) Doctors can now access patient data remotely and collaborate with specialists.
(b) It has led to the spread of information and clinic installations in cities.
(c) It has created new economic opportunities for individuals and organizations.
(d) It has aggravated the need for digital skills in the healthcare sector.
(e) All of these

Q73. How has the nature of work been affected by information technology?
(a) Information technology has had a negligible impact on the nature of work, as most jobs still require human labor and cannot be automated.
(b) Information technology has had a largely positive impact on the nature of work, as it has enabled greater productivity and the emergence of new jobs.
(c) The impact of information technology on the nature of work is difficult to assess, as it varies depending on the sector and region.
(d) All of these
(e) Only (a) and (c)

Q74. What is one of the benefits of IT in the business landscape?
(a) It has led to the widening of the income gap between different skill sets.
(b) It has revolutionized how companies operate and interact with customers.
(c) It has created new forms of international collaboration and innovation.
(d) It has reduced the demand for digital skills in the job market.
(e) None of these

Q75. What is one of the biggest challenges posed by information technology?
(a) Cyberbullying and online harassment with the advent of the internet and information technology.
(b) The widening income gap between those who possess the necessary skills and those who do not.
(c) Data privacy and security risks associated with storing and sharing personal information online.
(d) The risk of manual labor becoming redundant due to automation and artificial intelligence.
(e) IT professionals have become some of the most in-demand members of today's labor force.

Q76. What is the most significant implication of information technology on communication and information access?
(a) It has led to the spread of misinformation and online harassment.
(b) It has enabled individuals to connect with others and share their ideas.
(c) It has created new economic opportunities for individuals and organizations.
(d) It has widened the skills gap and increased the demand for manual labor.
(e) None of these

Q77. What changes has IT brought about in the world of business?
(i) Companies may now tailor customer experiences by using data analytics.
(ii) Technology has changed how businesses run and engage with their customers.
(iii) Digital technology has facilitated e-commerce and supply chain management
(a) Only (i) and (ii)
(b) Only (iii)
(c) Only (i) and (iii)
(d) All of these
(e) Only (ii) and (iii)

Q78. Which of the following words is most similar in meaning to the word **"blurred,"** as highlighted in the given passage?
(a) inflated
(b) obscured
(c) abridged
(d) curtailed
(e) dilated

Directions (79-83): Each of the following questions consists of a paragraph, which may contain one or more grammatical errors. Read the given paragraphs carefully, and then decide how many errors each paragraph contains.

Q79. Mindfulness meditation is a practice that involves focus one's attention on the present moment and cultivating a non-judgmental awareness of one's thoughts, feelings, and bodily sensations. Studies shown that regular practice of mindfulness meditation can reduce stress, improve mood, boost immune function, and enhance cognitive performance.
(a) Only one error
(b) Two errors
(c) Three errors
(d) Four errors
(e) Five errors

Q80. A diverse workforce brings a variety of perspectives, experiences, and ideas to the table, which can lead to the more innovation, creativity, and problem-solving. In addition, a diverse workplace can help to eliminate biases and promote fairness and equality for all employees. Companies that prioritize diversity and inclusion tends to have higher employee satisfaction, better customer relations, and greater financial success.
(a) Only one error
(b) Two errors
(c) Three errors
(d) Four errors
(e) Five errors

Q81. Online learning has become increasingly popular in recent years, offering students the flexibility to learn at there own pace and as per their own schedule. With a wide range from courses and programs available, online learning can help individuals gain new skills, advance their careers, and pursue there interests from anywhere in the world. Online learning can also be more cost effective then traditional classroom-based education, as it eliminates the need for commuting and provides access to a wealth of free or low-cost resources.
(a) Only one error
(b) Two errors
(c) Three errors
(d) Four errors
(e) Five errors

Q82. Regular exercise has shown to have numerous physical and mental health benefits, including reducing the risk of chronic diseases such as heart disease, diabetes, and cancer. Exercise can also help to improve mood, reduce stress and anxiety, and promote better sleep. By incorporating regular physical activity into our daily routines, we can improve our overall health and well-being.
(a) Only one error
(b) Two errors
(c) Three errors
(d) Four errors
(e) Five errors

Q83. Technology has revolutionized the way we live, work, and communicate in the modern world. From smartphones and social media to artificial intelligence and robotics, technology has transformed virtually every aspect of our lives. While technology have brought many benefits, it has also created new challenges and concerns. As technology continues to evolve, it is important for individuals and society as a whole to consider the ethical and social implications of their use.
(a) Only one error
(b) Two errors
(c) Three errors
(d) Four errors
(e) Five errors

Directions (84-89): There are six sentences given below in the jumbled form. You have to rearrange the given sentences to make a contextually meaningful paragraph and answer the following questions:
(A) As he grew older, John's dedication to learning foreign languages in school and on his own became more apparent, and he continued to expand his knowledge of different tongues and cultures.
(B) Growing up in a household where his parents spoke different languages provided John with a rare opportunity to immerse himself in different linguistic cultures.
(C) Driven by his unwavering commitment to language learning, John went on to become proficient in several languages and pursued a career as a highly-skilled translator.
(D) John's experience with learning foreign languages is unlike any other, as he has had a unique upbringing that allowed him to develop a deep appreciation and fascination for languages.
(E) With his innate talent for language acquisition, John was able to quickly assimilate new vocabulary and grammar rules, and he relished the challenge of mastering complex linguistic concepts.
(F) The exposure to multiple languages at an early age sparked John's interest in language learning and instilled in him a lifelong passion for exploring different dialects and linguistic systems.

Q84. Which of the following would be the **THIRD** sentence after rearrangement?
(a) E
(b) D
(c) F
(d) B
(e) A

Q85. Which of the following would be the **FIRST** sentence after rearrangement?
(a) F
(b) C
(c) B
(d) D
(e) E

Q86. Which of the following would be the **FIFTH** sentence after rearrangement?
(a) C
(b) A
(c) D
(d) B
(e) E

Q87. Which of the following would be the **SECOND** sentence after rearrangement?
(a) D
(b) F
(c) C
(d) A
(e) B

Q88. Which of the following would be the **LAST** sentence after rearrangement?
(a) F
(b) E
(c) D
(d) C
(e) B

Q89. Which of the following would be the correct rearrangement of the given sentences?
(a) AEDFBC
(b) DBFAEC
(c) BFDECA
(d) DCEABF
(e) FAEBCD

Directions (90-93): In each of the following questions, there are given two independent sentences containing six words highlighted in bold. These words may or may not be in their correct position. The sentences are then followed by certain instructions. Read the given instructions and answer the following questions:

Q90. Find the correct combination of the words that should replace each other to make both sentences contextually meaningful.
(I) The **concert (A)** was sold out, so we had to **obtain (B)** tickets from a **scalper (C)**,
(II) the tickets **turned (D)** out to be **spurious (E)**, so we had to find a **way (F)** to get our money back.
(a) (D)- (B)
(b) (B) - (E) and (C)- (F)
(c) (C)- (D)
(d) (A)- (C) and (B)- (D)
(e) No replacement required

Q91. Find the correct option to connect the two sentences given above without changing the intended meaning.
(a) and
(b) but
(c) even
(d) also
(e) when

Q92. Find the correct combination of the words that should replace each other to make both sentences contextually meaningful.
(I) The park was **dismayed (A)**, and we **adored (B)** walking around and taking in the **reparation(C)**;
(II) we were **sublime (D)** to find out that the main **attraction (E)** was closed for **scenery (F)**.
(a) (A)- (D)
(b) (A)- (D) and (C)- (F)
(c) (B)- (E)
(d) (A)- (C) and (B) - (E**)**
(e) No replacement required

Q93. Find the correct option to connect the two sentences given above without changing the intended meaning.
(a) however
(b) as well as
(c) although
(d) even after
(e) because

Directions (94-100): Read the passage given below and answer the following questions.
As I sit down to write my memoir, my mind takes me back to some of the most memorable days of my life. I remember the day I graduated from college, feeling a sense of accomplishment and relief that four years of hard work had finally paid off. It was a day of celebration, surrounded by family and friends who had supported me throughout my academic journey. Another day that stands out in my memory is the day I got married. I can still feel the warmth of the sun on my face and the excitement in my heart as I watched my bride walk down the aisle. It was a day filled with joy and love, surrounded by our closest friends and family. It marked the beginning of a new chapter in my life, one that would bring me countless moments of happiness and fulfillment.
But perhaps the most memorable day of my life was the day I became a parent. Holding my newborn child in my arms for the first time, I felt a sense of awe and wonder at the miracle of life. As I looked into my child's eyes, I knew that my life would never be the same again. Being a parent has brought me more joy, love, and fulfillment than I ever could have imagined, and that day marked the beginning of a new and wonderful adventure. While there have been many memorable and happy moments in my life, there have also been challenges and struggles along the way. One of the biggest challenges I faced was when I lost my job during a period of economic recession. I remember feeling overwhelmed and uncertain about my future, wondering how I would support myself and my family. It was a difficult time, but I was able to persevere **by leaning on** my loved ones and eventually finding a new job.

Another challenge I faced was when a close family member became ill. It was a time of worry and stress as we navigated the healthcare system and tried to support our loved ones in the best way possible. It was a reminder of how **fragile** life can be and how important it is to cherish the time we have with the people we love. In addition to these challenges, there have been smaller obstacles and setbacks along the way, such as financial struggles and personal disagreements. However, I have learned that each challenge provides an opportunity for growth and resilience. By facing these challenges head-on and learning from them, I have become a stronger and more compassionate person.

Q94. What was the most memorable day of the author's life according to the passage?
(a) The day he graduated from college, feeling a sense of accomplishment and relief.
(b) The day he got married, surrounded by friends and family.
(c) The day he became a parent, holding his newborn child for the first time.
(d) The day he lost his job during a period of economic recession.
(e) All of these

Q95. What did the author realize after a close family member became ill?
(a) How important it is to enjoy the time with the people we love
(b) How important family and friends are in our lives
(c) How important it is to ignore and neglect the healthcare system
(d) How important it is to support our loved ones
(e) How important it is to improve the existing infrastructure

Q96. What lesson did the author learn from the challenges he faced?
(a) Challenges are to be avoided at all costs
(b) Challenges provide opportunities for growth and resilience
(c) Challenges are an indication of failure
(d) Challenges are insurmountable obstacles
(e) Both (a) and (b)

Q97. What was the author's experience on the day he got married?
(a) A day of celebration surrounded by family and friends
(b) Overwhelmed and uncertain about the future
(c) A reminder of how fragile and bad life can be
(d) A time of worry and stress about the future
(e) All of these

Q98. What was the biggest challenge the author faced, and how did he cope with it?
(a) Facing financial struggles and learning to be more resilient and compassionate.
(b) Losing his job during an economic recession and persevering with the help of loved ones.
(c) Overcoming personal disagreements and growing as a person by facing challenges head-on.
(d) Navigating the healthcare system when a family member became ill and realizing the fragility of life.
(e) None of these

Q99. What does the highlighted phrase **"by leaning on"** stand for as highlighted in the given passage?
(a) The speaker had a difficult time because he relied too much on his loved ones.
(b) The speaker did not have a difficult time but pretended to have one to gain sympathy.
(c) The speaker had a difficult time but did not seek help from his loved ones.
(d) The speaker had an easy time and only leaned on his loved ones for fun.
(e) The speaker had a tough time but he received support from his family and friends.

Q100. Choose the word from the following options which is the most similar in meaning to the word **"FRAGILE"**, as highlighted in the given passage.
(a) vindictive
(b) pungent
(c) gossamer
(d) persistent
(e) splenetic

Directions (101-102): In each of the following questions, a sentence has been divided into four phrases. These phrases may or may not have been placed in their correct positions. Identify the correct rearrangement of the phrases to make the sentence grammatically correct and contextually meaningful, and mark that option as your answer.

Q101. shaped the world we live in today and (A)/ triumphs and tragedies, all of which have (B)/ the history of humanity is a story of (C)/ offer valuable lessons for the future (D)
(a) ACDB
(b) CBDA
(c) BCDA
(d) CBAD
(e) No rearrangement required

Q102. mystery and wonder, with billions of (A)/ a burning beacon of light in the vastness of space (B)/ the universe is an endless expanse of (C)/ galaxies and trillions of stars, each one (D)
(a) CABD
(b) BDAC
(c) DBCA
(d) CADB
(e) No rearrangement required

Directions (103-105): Each of the following questions consists of a sentence with a blank. Choose the most appropriate phrase from the given options that must fill in the blank to form a grammatically correct and contextually meaningful sentence.

Q103. Understanding the _____ is crucial for making informed decisions about how to allocate resources and address global challenges such as climate change.
(a) biological mechanisms of human memory
(b) construction techniques used in ancient civilizations
(c) geologic processes that shape the Earth's surface
(d) economic theories of supply and demand
(e) historical events leading up to the monetary crisis

Q104. A good night's sleep is critical for maintaining _____, which can have a significant impact on overall health and well-being.
(a) the ability to select and coordinate with accessories
(b) the internal process that regulates sleep-wake cycles
(c) the ability to diagnose and fix mechanical problems
(d) the ability to write and execute computer code fastly
(e) the ability to prepare complex and flavorful dishes

Q105. A deep understanding of _____ is essential for success in the field of medicine, where accurate diagnosis and treatment rely on careful observation and analysis.
(a) the chemical composition of common products
(b) the structure and function of the human body
(c) the principles of modern dance choreography
(d) the history of the ancient medical falsehoods
(e) the intricacies of medical laws and principles

Solutions

S1. Ans.(c)
Sol.
Logic- Step 1. Multiply 1st and 2nd digit and subtract 1 from middle digit after that multiply 4th and 5th digit.
Step 2. Arranged odd number in descending order then even numbered in descending order from left to right.
Step 3. Eliminate 1st digit of each number then addition of 2nd and 3rd digit and put the square of the sum after that addition of 4th and 5th digit and put the square of the sum.
Step 4. Total sum of 1st and 2nd number and so on.
Step 5. Digit sum of each number and then put the square of the number after that arranged the same number after the square number.

Input: 28465	**79784**	**63452**	**34867**	**93275**
Step I: 16330	63632	18310	12742	27135
Step II: 27135	63632	18310	16330	12742
Step III: 64 64	25 81	01 121	09 81	36 81
Step IV: 128	106	122	90	117
Step V: 121128	49106	25122	8190	81117

S2. Ans.(a)
Sol.
Logic- Step 1. Multiply 1st and 2nd digit and subtract 1 from middle digit after that multiply 4th and 5th digit.
Step 2. Arranged odd number in descending order then even numbered in descending order from left to right.
Step 3. Eliminate 1st digit of each number then addition of 2nd and 3rd digit and put the square of the sum after that addition of 4th and 5th digit and put the square of the sum.
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Step IV: 128	106	122	90	117
Step V: 121128	49106	25122	8190	81117

S3. Ans.(d)
Sol.

Logic- Step 1. Multiply 1st and 2nd digit and subtract 1 from middle digit after that multiply 4th and 5th digit.

Step 2. Arranged odd number in descending order then even numbered in descending order from left to right.

Step 3. Eliminate 1st digit of each number then addition of 2nd and 3rd digit and put the square of the sum after that addition of 4th and 5th digit and put the square of the sum.

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Step IV: 128	106	122	90	117
Step V: 121128	49106	25122	8190	81117

S4. Ans.(c)
Sol.

Logic- Step 1. Multiply 1st and 2nd digit and subtract 1 from middle digit after that multiply 4th and 5th digit.

Step 2. Arranged odd number in descending order then even numbered in descending order from left to right.

Step 3. Eliminate 1st digit of each number then addition of 2nd and 3rd digit and put the square of the sum after that addition of 4th and 5th digit and put the square of the sum.

Step 4. Total sum of 1st and 2nd number and so on.

Step 5. Digit sum of each number and then put the square of the number after that arranged the same number after the square number.

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Step I: 16330	63632	18310	12742	27135
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Step III: 64 64	25 81	01 121	09 81	36 81
Step IV: 128	106	122	90	117
Step V: 121128	49106	25122	8190	81117

S5. Ans.(b)
Sol.

Floors	Flat A	Flat B
12	J	O
11		R
10	P	K
9		
8		Q
7	S	
6		W
5	U	
4		
3		T
2		
1	X	

S6. Ans.(e)
Sol.

Floors	Flat A	Flat B
12	J	O
11		R
10	P	K
9		
8		Q
7	S	
6		W
5	U	
4		
3		T
2		
1	X	

Except W, all live on same named flat.

S7. Ans.(e)
Sol.

Floors	Flat A	Flat B
12	J	O
11		R
10	P	K
9		
8		Q
7	S	
6		W
5	U	
4		
3		T
2		
1	X	

S8. Ans.(a)
Sol.

Floors	Flat A	Flat B
12	J	O
11		R
10	P	K
9		
8		Q
7	S	
6		W
5	U	
4		
3		T
2		
1	X	

S9. Ans.(e)

Sol.

Floors	Flat A	Flat B
12	J	O
11		R
10	P	K
9		
8		Q
7	S	
6		W
5	U	
4		
3		T
2		
1	X	

S10. Ans.(b)

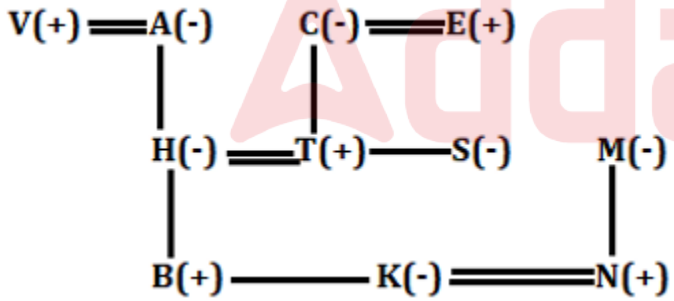
Sol. Option (I)-True-Reason: High court is giving verdict about the people in Delhi, it means they are assuming that all will follow the rules.

Option (II)-True-Reason: High court is giving importance to mask, they are terming it as "Suraksha Kavach". Surely, people will get aware.

Option (III)-False-Reason: Appeal to wear mask has been done, but due to this car will not be less on the road. As there is not any lockdown or curfew.

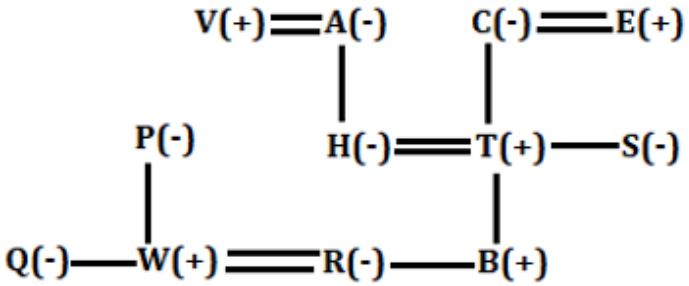
S11. Ans.(b)

Sol. B's brother-in-law i.e., N is son-in-law of T who is V's son-in-law.

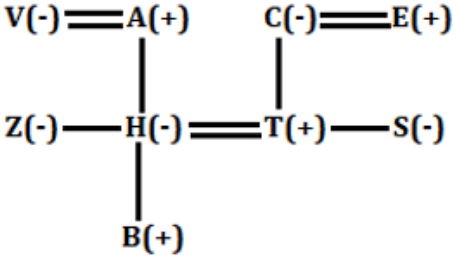


S12. Ans.(c)

Sol.



S13. Ans.(c)
Sol. S is sister-in-law of Z.



S14. Ans.(d)
Sol.

Box	Pencil
B	48
E	42
A	36
D	30
C	24
F	18

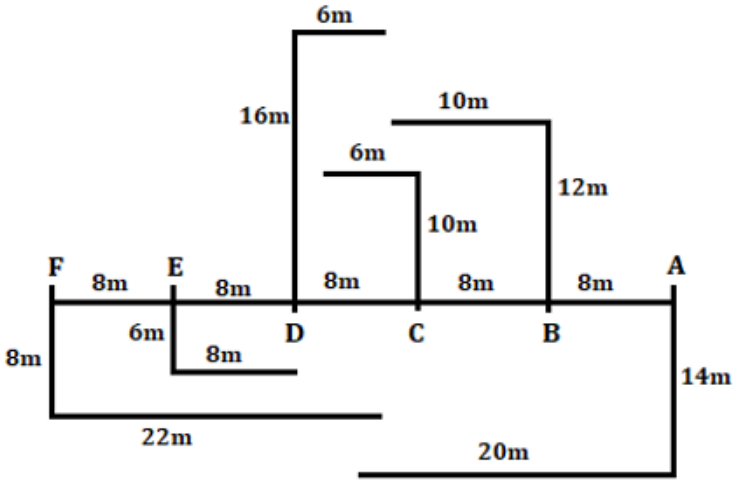
S15. Ans.(e)
Sol.

Box	Pencil
B	48
E	42
A	36
D	30
C	24
F	18

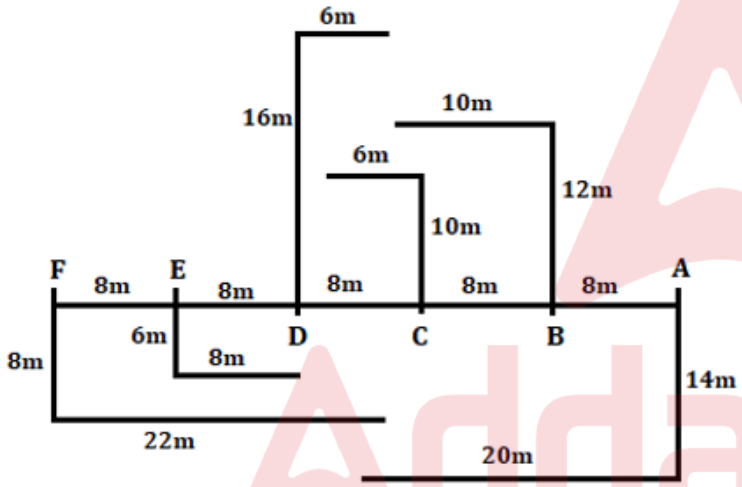
S16. Ans.(d)
Sol. Statement (I)-True-Reason: As mentioned in the above statement, after just 17 cases from India, New Zealand has suspended flights. It clearly means they are aware and cautious too.
Statement (II)-False-Reason: Vaccination is one of the most preventive measures against Coronavirus, but nothing has been mentioned in above statement. So, it can't infer.
Statement (III)-False-Reason: In Above statement, only thing is mentioned about India is New Zealand temporarily suspended flight from India following a high number of positive coronavirus cases arriving from the South Asian country. It means cases in India is increasing but we can't infer that India is among top 3 countries.

S17. Ans.(b)
Sol. Statement (I)-False-Reason: New Zealand has taken the action in surge of increasing cases of coronavirus in India. It's not a cold war or tit for tat situation.
Statement (II)-False-Reason: New Zealand has just taken a precautionary measure to control covid-19. So, India will not take this extreme course of action.
Statement (III)-True-Reason: As at border out of 23 positive 17 are from India. So, if after this temporary suspension New Zealand will obviously feel safe.

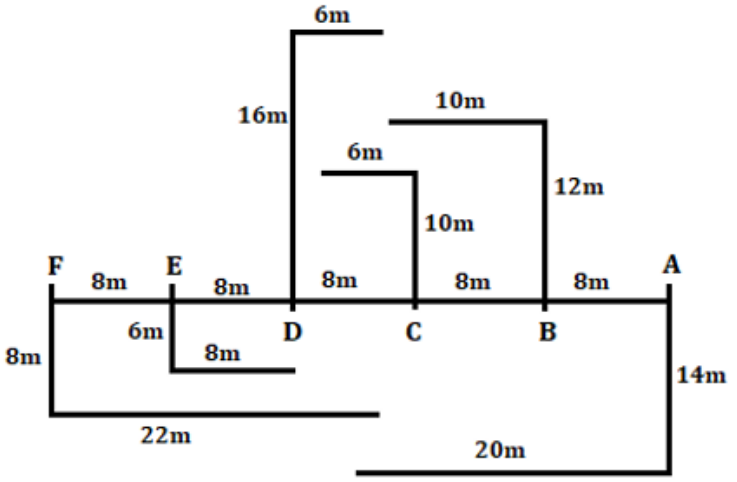
S18. Ans.(a)
Sol.



S19. Ans.(e)
Sol.

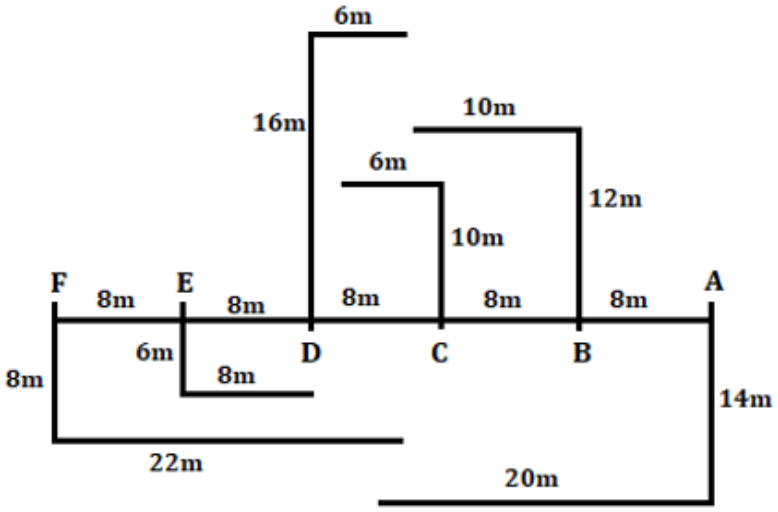


S20. Ans.(c)
Sol.



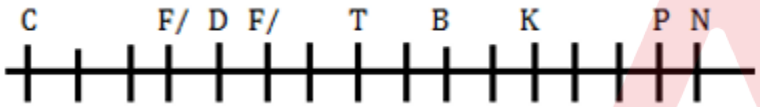
S21. Ans.(d)

Sol.



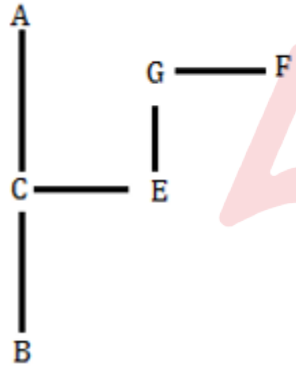
S22. Ans.(d)

Sol.



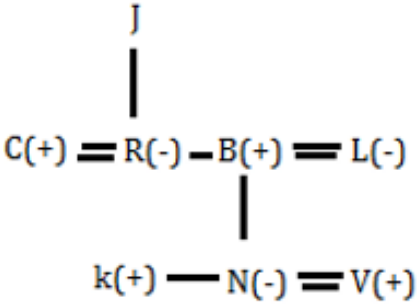
S23. Ans.(e)

Sol.



S24. Ans.(c)

Sol.



S25. Ans.(b)
Sol.

Days	Persons	Numbers
Monday	R	9
Tuesday	P	2
Wednesday	Q	13
Thursday	U	6
Friday	V	10
Saturday	T	8
Sunday	S	12

S26. Ans.(a)
Sol.

Days	Persons	Numbers
Monday	R	9
Tuesday	P	2
Wednesday	Q	13
Thursday	U	6
Friday	V	10
Saturday	T	8
Sunday	S	12

S27. Ans.(d)
Sol.

Days	Persons	Numbers
Monday	R	9
Tuesday	P	2
Wednesday	Q	13
Thursday	U	6
Friday	V	10
Saturday	T	8
Sunday	S	12

S28. Ans.(e)
Sol.

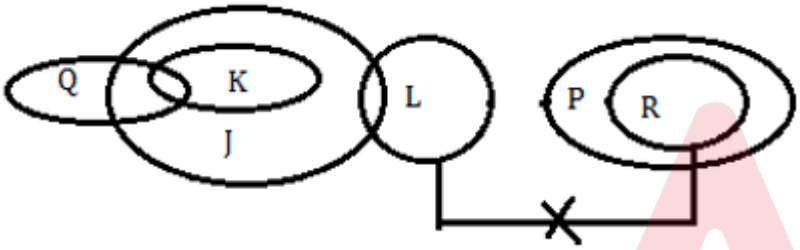
Days	Persons	Numbers
Monday	R	9
Tuesday	P	2
Wednesday	Q	13
Thursday	U	6
Friday	V	10
Saturday	T	8
Sunday	S	12

Except R all of them prepared dishes in even number.

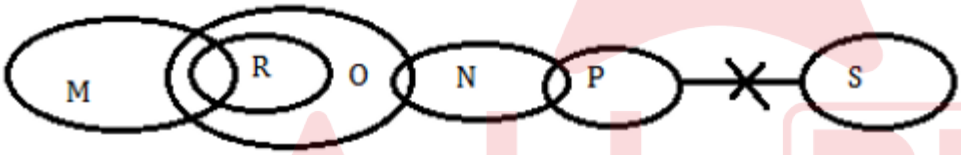
S29. Ans.(a)
Sol.

Days	Persons	Numbers
Monday	R	9
Tuesday	P	2
Wednesday	Q	13
Thursday	U	6
Friday	V	10
Saturday	T	8
Sunday	S	12

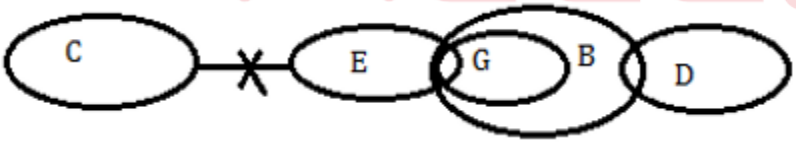
S30. Ans.(e)
Sol.



S31. Ans.(a)
Sol.



S32. Ans.(a)
Sol.



S33. Ans.(d)
Sol.

Stack C		Stack K		Stack T	
Boxes	Pencils	Boxes	Pencils	Boxes	Pencils
		G	36		
		P	30		
L	35	U	24		
F	28	D	18	J	25
M	21	A	12	R	20
W	14	S	6	Y	15

S34. Ans.(e)

Sol.

Stack C		Stack K		Stack T	
Boxes	Pencils	Boxes	Pencils	Boxes	Pencils
		G	36		
		P	30		
L	35	U	24		
F	28	D	18	J	25
M	21	A	12	R	20
W	14	S	6	Y	15

S35. Ans.(a)

Sol.

Stack C		Stack K		Stack T	
Boxes	Pencils	Boxes	Pencils	Boxes	Pencils
		G	36		
		P	30		
L	35	U	24		
F	28	D	18	J	25
M	21	A	12	R	20
W	14	S	6	Y	15

S36. Ans.(c)

Sol.

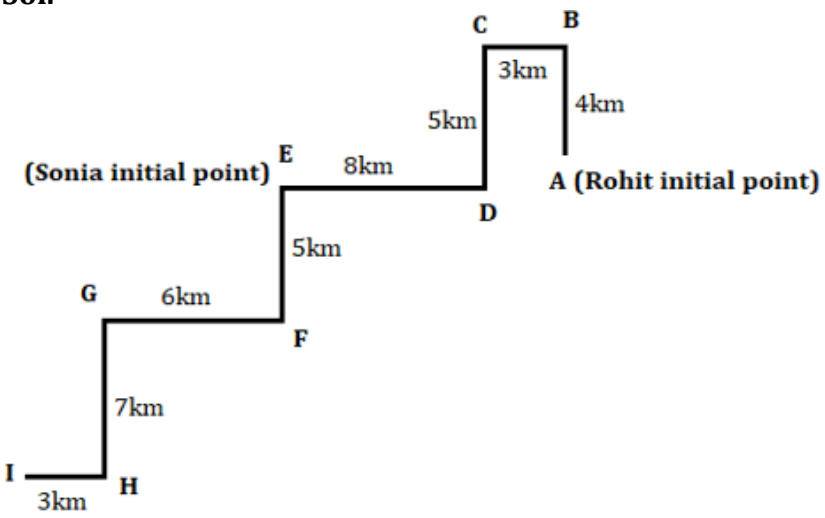
Stack C		Stack K		Stack T	
Boxes	Pencils	Boxes	Pencils	Boxes	Pencils
		G	36		
		P	30		
L	35	U	24		
F	28	D	18	J	25
M	21	A	12	R	20
W	14	S	6	Y	15

S37. Ans.(d)

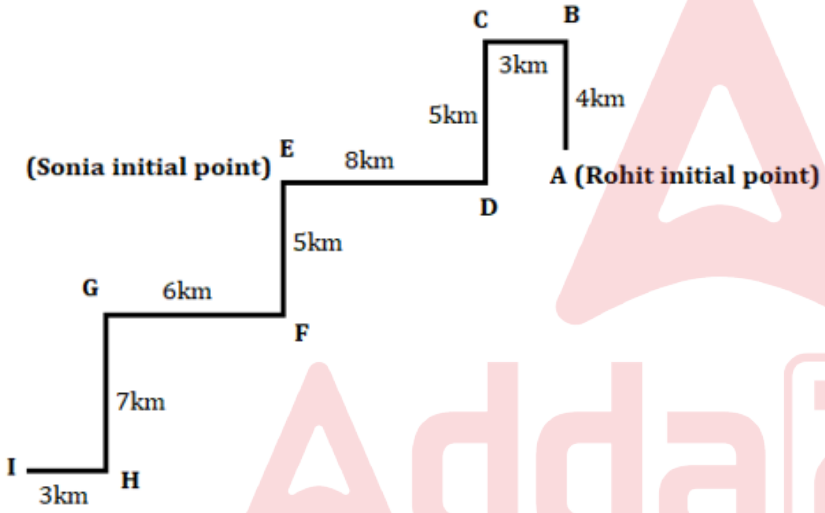
Sol.

Stack C		Stack K		Stack T	
Boxes	Pencils	Boxes	Pencils	Boxes	Pencils
		G	36		
		P	30		
L	35	U	24		
F	28	D	18	J	25
M	21	A	12	R	20
W	14	S	6	Y	15

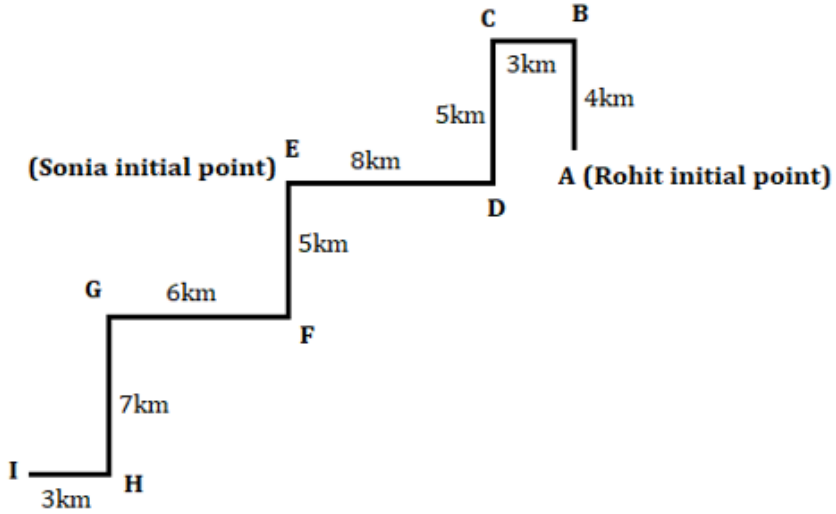
S38. Ans.(b)
Sol.



S39. Ans.(d)
Sol.



S40. Ans.(c)
Sol.



S41. Ans.(d)

Sol.

Pattern of series A:

$32 + (7^2 + 1) = 82$

$82 + (9^2 + 1) = 164$

$164 + (11^2 + 1) = 286$

$286 + (13^2 + 1) = 456$

$456 + (15^2 + 1) = 682$

It follows the pattern

Pattern of series B:

$140 + (5^2 + 1) = 166$

$166 + (7^2 + 1) = 216$

$216 + (11^2 + 1) = 338$

$338 + (13^2 + 1) = 508$

$508 + (17^2 + 1) = 798$

It does not follow the pattern

Pattern of series C:

$400 + (3^2 + 1) = 410$

$410 + 5^2 = 435$

$435 + (7^2 + 1) = 485$

$485 + (9^2 + 1) = 567$

$567 + (11^2 + 1) = 689$

It does not follow the pattern

S42. Ans.(a)

Sol.

Pattern of series I.

5, 6, 8, 14, 38, a=**158**, 878, 5918

+1 +2 +6 +24 +120 +720 +5040

↑ ↑ ↑ ↑ ↑ ↑ ↑

1! 2! 3! 4! 5! 6! 7!

Pattern of series II.

32, 544, 593, 809, b=834, 898, 907

+512 +49 +216 +25 +64 +9

↑ ↑ ↑ ↑ ↑ ↑

8^3 7^2 6^3 5^2 4^3 3^2

Pattern of series III.

$18 \times 2 + 4 = 40$

$40 \times 3 + 4 = 124$

$124 \times 4 + 4 = 500$

$500 \times 5 + 4 = 2504$

$2504 \times 6 + 4 = 15028$

$15028 \times 7 + 4 = 105200$

$c = 40$

Given, $m^2 = \sqrt{a + 98}$

$m^2 = \sqrt{158 + 98}$

$m^2 = \sqrt{256}$

$m^2 = 16$

$m = 4 \& -4$

For (A). When m = 4, then $\frac{834}{4} + 0.5 = 209$

And, 209 is an integer

When m = −4, then $\frac{834}{-4} + 0.5 = -208.5 + 0.5 = -208$

And, −208 is an integer

So, (A) is true

For (B). When m = 4, then $10 \times 4 = 40$

And c = 40

But when m = - 4, then $10 \times -4 = -40$

So, we definitely can't say 10m = c

For (C). When m = 4, then $4 + \frac{(834-42)}{18} = 48$

And, c = 40

So, resultant > c

When m = -4, then $-4 + \frac{(834-42)}{18} = 40$

And c = 40

So, resultant = c

So, (C) is true

Only (A) and (C) are true.

S43. Ans.(e)

Sol.

Pattern of series I.

5, 6, 8, 14, 38, a=**158**, 878, 5918

+1 +2 +6 +24 +120 +720 +5040

↑ ↑ ↑ ↑ ↑ ↑ ↑

1! 2! 3! 4! 5! 6! 7!

Pattern of series II.

32, 544, 593, 809, b=834, 898, 907

+512 +49 +216 +25 +64 +9

↑ ↑ ↑ ↑ ↑ ↑

8^3 7^2 6^3 5^2 4^3 3^2

Pattern of series III.

$18 \times 2 + 4 = 40$

$40 \times 3 + 4 = 124$

$124 \times 4 + 4 = 500$

$500 \times 5 + 4 = 2504$

$2504 \times 6 + 4 = 15028$

$15028 \times 7 + 4 = 105200$

c = 40

$n^2 - cn + (2.5a - 11) = n^2 - 40n + (2.5 \times 158 - 11)$
$n^2 - 40n + 384 = 0$
$n(n-24) - 16(n-24) = 0$
n = 24 & 16
So, $y = 2 \times 24 = 48$
For (a) $(48 - 40) = 8 = 2^3$
So, (a) is true
For (b) Value of $\frac{834}{48} = 17.375 > 16$
So, (b) is true
For (c) Value of $\frac{158}{48} = 3.29$ is not an integer
So, both (a) and (b) are true

S44. Ans.(c)
Sol.
For equation 1, Sum of roots = x + y
x + y = 7.....(1)
Product of roots = xy
xy = d.....(2)
For equation 2, Sum of roots = x + y – x
$x + y - x = 4$
y = 4
Product of roots
x(y-x) = d-9 .....(3)
Put the value of y in equation (1)
x + 4 = 7
x = 3
Put value of x and y in eq. (2)
d = 12
$3^z[b^2 - 4b + (12-9)] = 0$
$3^z[b^2 - 3b - b + 3] = 0$
$3^z(b-3)(b-1) = 0$
roots are 3 and 1
3^z can't be 0
Hence, only two roots are formed
Required value = 1 + 1 = 2

S45. Ans.(e)
Sol.
For equation 1, Sum of roots = x + y
x + y = 7.....(1)
Product of roots = xy
xy = d.....(2)

For equation 2, Sum of roots = x + y – x

$x + y - x = 4$

y = 4

Product of roots

x(y-x) = d-9 .....(3)

Put the value of y in equation (1)

x + 4 = 7

x = 3

Put value of x and y in eq. (2)

d = 12

$(d - 8)^y = (12-8)^4 = 4^4 = 256$

S46. Ans.(c)

Sol.

From the conditions given in question

possible values of c

c = 3, 5, 7

Possible values of d

d = 13, 17, 19

Possible values of b

b = 17, 19

here we can't take b = 13 because b is always greater than d

As 3c is greater than b

if c = 3

3c = 9 (invalid)

if c = 5

3c = 15 (invalid)

if c = 7

3c = 21 (valid)

d cannot be 19 because if d =19 then there will be no value of b such that b will be greater to d

now,

c = 7

d = 13, 17

b = 17, 19

Possible value of c, d, b and e respectively

(i) 7, 13, 17, 18.....(1)

(ii) 7, 13, 19, 20 .....(2)

(iii) 7, 17, 19, 20.....(3)

For the roots to be rational

d(discriminant) will be perfect square

For equation 2

$e^2 - 4dc$ must be perfect square

Using value from (1)

$324 - 4 \times 13 \times 7 = -40$

d < 0

Roots are not real

hence, Values are invalid

Using value from (2)
$400 - 4 \times 13 \times 7 = 36$
d is a perfect square
Roots are rational number
hence, values are valid

Using value from (3)
$400 - 4 \times 17 \times 7 = -76$
$d < 0$
roots are not real
hence, values are invalid
So,
c = 7
d = 13
b = 19
e = 20
For Equation 2
$13y^2 + 20y + 7 = 0$
$13y^2 + 13y + 7y + 7 = 0$
$y = -\frac{7}{13}, -1$
Smallest root = - 1
Now putting in equation 1
$a(-1)^2 + 19(-1) + 7 = 0$
$a = 19 - 7$
$a = 12$

S47. Ans.(e)
Sol.
From the conditions given in question
possible values of c
c = 3, 5, 7
Possible values of d
d = 13, 17, 19
Possible values of b
b = 17, 19
here we can't take b = 13 because b is always greater than d
As 3c is greater than b
if c = 3
3c = 9 (invalid)
if c = 5
3c = 15 (invalid)
if c = 7
3c = 21 (valid)
d cannot be 19 because if d =19 then there will be no value of b such that b will be greater to d

now,
c = 7
d = 13, 17
b = 17, 19
Possible value of c, d, b and e respectively
(i) 7, 13, 17, 18.....(1)
(ii) 7, 13, 19, 20 .....(2)
(iii) 7, 17, 19, 20.....(3)
For the roots to be rational
d(discriminant) will be perfect square
For equation 2
$e^2 - 4dc$ must be perfect square
Using value from (1)
$324 - 4 \times 13 \times 7 = -40$
$d < 0$
Roots are not real
hence, Values are invalid

Using value from (2)
$400 - 4 \times 13 \times 7 = 36$
d is a perfect square
Roots are rational number
hence, values are valid

Using value from (3)
$400 - 4 \times 17 \times 7 = -76$
$d < 0$
roots are not real
hence, values are invalid
So,
c = 7
d = 13
b = 19
e = 20
$d \times e = 13 \times 20 = 260$

S48. Ans.(b)
Sol.
When 10 more girls in class R then probability of selecting a girl is 40%
then, probability of selecting a boy is 60%
Number of boys in R = 60
60% = 60
40% = 40
When 10 more girls are added
So,
a + 5b = 40 – 10 = 30

Number of girls in Q $= \frac{2}{3} \times$ no. of girls in R $= \frac{2}{3} \times 30 = 20$

Number of boys in S $= \frac{6}{5} \times 20 = 24$

Number of girls in S = number of girls in Q = 20

Probability of selecting two girls from class S $= \frac{20C_2}{44C_2} = \frac{\left[\frac{20\times19}{2}\right]}{\left[\frac{44\times43}{2}\right]} = \frac{95}{473}$

S49. Ans.(d)

Sol.

When 10 more girls in class R then probability of selecting a girl is 40%
then, probability of selecting a boy is 60%
Number of boys in R = 60
60% = 60
40% = 40
When 10 more girls are added
So,
a + 5b = 40 – 10 = 30

Number of girls in P $= \frac{25}{100} \times 40 = 10$

a + b = 10 .....(1)
a + 5b = 30 .... (2)
On solving the above equation
b = 5, a= 5
Number of students in P = 10 + 40 = 50
Number of students in Q = 20 + 5 + 15 = 40
Required difference = 50 – 40 = 10

S50. Ans.(d)

Sol.

When 10 more girls in class R then probability of selecting a girl is 40%
then, probability of selecting a boy is 60%
Number of boys in R = 60
60% = 60
40% = 40
When 10 more girls are added
So,
a + 5b = 40 – 10 = 30

Number of student who opt science stream in class R $= \frac{1}{9} \times (60 + 30) = 10$

Number of girls who opt science stream $= \frac{3}{10} \times 10 = 3$

Number of girls in Q = 3 × 6 = 18
Total number of student in Q = 18 + 20 = 38

S51. Ans.(e)
Sol.
When 10 more girls in class R then probability of selecting a girl is 40%
then, probability of selecting a boy is 60%
Number of boys in R = 60
60% = 60
40% = 40
When 10 more girls are added
So,
a + 5b = 40 – 10 = 30
Number of girls in class P = $\frac{40}{100} \times 30 = 12$
Number of boys in class P = 40
Number of ways of making a group B from class P = $12C_2 \times 40C_1 = 6 \times 11 \times 40 = 2640$
Number of ways of making a group A from class R = $30C_2 \times 60C_1 = 15 \times 29 \times 60 = 26100$
Required difference = 26100 – 2640 = 23460

S52. Ans.(a)
Sol.
Let the selling price of each wooden toy sold by Rahul and Ram be Rs. x
Let the selling price of each plastic toy sold by Ram and Rahul be Rs. y
Selling price of each wooden toy = 2 × (selling price of each plastic toys)
x = 2y
let number of wooden toys sold by Rahul be 8a
Number of plastic toys sold by Rahul = $\frac{3}{8} \times 8a = 3a$
Number of wooden toys sold by Ram = $\frac{8a}{2} \times 3 = 12a$
Number of plastic toys sold by Ram = 8a (equal to the wooden toys sold by Rahul)
Total toys sold by Ram = 100
12a + 8a = 100
a = 5
For Rahul
Number of wooden toys = 40
Number of plastic toys = 15
Selling price of each wooden toy = 2y
Selling price of each plastic toy = y
For Ram
Number of wooden toys = 60
Number of plastic toys = 40
Selling price of each wooden toy = 2y
Selling price of each plastic toy = y
Total plastic toys sold by both = 40 + 15 = 55
Total Wooden toys sold by both = 100
Required percentage = $\frac{100-55}{100} \times 100\% = 45\%$

S53. Ans.(c)

Sol.

Let the selling price of each wooden toy sold by Rahul and Ram be Rs. x

Let the selling price of each plastic toy sold by Ram and Rahul be Rs. y

Selling price of each wooden toy = 2 × (selling price of each plastic toys)

x = 2y

let number of wooden toys sold by Rahul be 8a

Number of plastic toys sold by Rahul = $\frac{3}{8} \times 8a = 3a$

Number of wooden toys sold by Ram = $\frac{8a}{2} \times 3 = 12a$

Number of plastic toys sold by Ram = 8a (equal to the wooden toys sold by Rahul)

Total toys sold by Ram = 100

12a + 8a = 100

a = 5

For Rahul

Number of wooden toys = 40

Number of plastic toys = 15

Selling price of each wooden toy = 2y

Selling price of each plastic toy = y

For Ram

Number of wooden toys = 60

Number of plastic toys = 40

Selling price of each wooden toy = 2y

Selling price of each plastic toy = y

Selling price of each plastic toy = y

Selling price of each wooden toys = 2y

2y = 120

y = 60

Revenue genrated of Rahul = 120 × 40 + 60 × 15 = 4800 + 900 = Rs. 5700

Revenue genrataedof Ram = 120 × 60 + 60 × 40 = 7200 + 2400 = Rs. 9600

required difference = 9600 – 5700 = Rs. 3900

S54. Ans.(e)

Sol.

Let the selling price of each wooden toy sold by Rahul and Ram be Rs. x

Let the selling price of each plastic toy sold by Ram and Rahul be Rs. y

Selling price of each wooden toy = 2 × (selling price of each plastic toys)

x = 2y

let number of wooden toys sold by Rahul be 8a

Number of plastic toys sold by Rahul = $\frac{3}{8} \times 8a = 3a$

Number of wooden toys sold by Ram = $\frac{8a}{2} \times 3 = 12a$

Number of plastic toys sold by Ram = 8a (equal to the wooden toys sold by Rahul)
Total toys sold by Ram = 100
12a + 8a = 100
a = 5
For Rahul
Number of wooden toys = 40
Number of plastic toys = 15
Selling price of each wooden toy = 2y
Selling price of each plastic toy = y
For Ram
Number of wooden toys = 60
Number of plastic toys = 40
Selling price of each wooden toy = 2y
Selling price of each plastic toy = y

Required Ratio = $\frac{40}{60} = \frac{2}{3} = 2:3$

S55. Ans.(b)
Sol.

As, probability of Picking 2.5 is $\frac{1}{3}$
Total numbers = 6
So, there will be two number of 2.5
then,
Q – 2.5 = 2.5
(As probability is same and it has 6 unique numbers and probability of picking Q – 2.5 and 2.5 is same)
Q = 5

Series is:
5, 2.5 , 2.5, P, 7.5, 18.75
Pattern of the series:
$5 \times 0.5 = 2.5$
$2.5 \times 1 = 2.5$
$2.5 \times 1.5 = \mathbf{3.75} = \mathbf{P}$
$3.75 \times 2 = 7.5$
$7.5 \times 2.5 = 18.75$
P = 3.75

S56. Ans.(d)
Sol.

As, probability of Picking 2.5 is $\frac{1}{3}$
Total numbers = 6
So, there will be two number of 2.5
then,
Q – 2.5 = 2.5

(As probability is same and it has 6 unique numbers and probability of picking Q – 2.5 and 2.5 is same)

Q = 5

R = 5 × 5 – 20

R = 25 – 20 = 5

S57. Ans.(b)

Sol.

As, probability of Picking 2.5 is $\frac{1}{3}$

Total numbers = 6

So, there will be two number of 2.5

then,

Q – 2.5 = 2.5

(As probability is same and it has 6 unique numbers and probability of picking Q – 2.5 and 2.5 is same)

Q = 5

ATQ,

$Q + 2.5 + Q - 2.5 + P + \frac{4Q-5}{2} + 18.75 = 7 \times 6$

5 + 5 + P + 7.5 + 18.75 = 42

P = 42 – 36.25

P = 5.75

Required value = $\frac{4\times5.75-3}{5} = \frac{20}{5} = 4$

S58. Ans.(b)

Sol.

Let the quantity of milk and water be 4p and 5p respectively

Let x = 9a

ATQ,

$\frac{\left[\left(4p-\frac{4}{9}\times9a\right)+9a\right]}{5p-\frac{5}{9}\times9a} = \frac{57}{60}$

$\frac{4p+5a}{5p-5a} = \frac{57}{60}$

$\frac{4p+5a}{5(p-a)} = \frac{57}{60}$.....(1)

Another condition of question

9p – 108 = 9a

p – a = 12 .....(2)

Now putting value of (2) in (1)

$\frac{4p+5a}{5(p-a)} = \frac{57}{60}$

$\frac{4p+5a}{5\times12} = \frac{57}{60}$

4p + 5a = 57.....(3)

From eq. (3) & (2)
p = 12
a = 1
Initial quantity of mixture = 9p = 117 ml
Initial quantity of milk = 52 ml
Initial quantity water = 65 ml
Quantity of mixture sold = x = 9a = 9 ml

QUICKER APPROACH

		Milk		Water		Total
Sold = Initial – 108ml						
Initial – Sold = 108ml	Initial	4	:	5		
Remaining = 108ml	Remaining	4	:		5	108 ml
		48 ml		60 ml		
	Final	57	:	60		
		57 ml		60 ml		117ml

Initial = Final= 117ml, since there is a replacement
X = 9ml
Quantitiy of mixture sold = $3x = 27$ml
Volume of vessel filled = $\left[\left(52-\frac{4}{9}\times 27\right)+3\right]+\left[\left(65-\frac{5}{9}\times 27\right)+18\right]=111\ cm^3$

S59. Ans.(c)
Sol.
Let the quantity of milk and water be 4p and 5p respectively
Let x = 9a
ATQ,
$\frac{\left[\left(4p-\frac{4}{9}\times 9a\right)+9a\right]}{5p-\frac{5}{9}\times 9a}=\frac{57}{60}$
$\frac{4p+5a}{5p-5a}=\frac{57}{60}$
$\frac{4p+5a}{5(p-a)}=\frac{57}{60}$.....(1)
Another condition of question
9p – 108 = 9a
p – a = 12 .....(2)
Now putting value of (2) in (1)
$\frac{4p+5a}{5(p-a)}=\frac{57}{60}$
$\frac{4p+5a}{5\times 12}=\frac{57}{60}$
4p + 5a = 57.....(3)
From eq. (3) & (2)
p = 12
a = 1
Initial quantity of mixture = 9p = 117 ml
Initial quantity of milk = 52 ml
Initial quantity water = 65 ml
Quantity of mixture sold = x = 9a = 9 ml

QUICKER APPROACH

Sold = Initial – 108ml			Milk		Water		Total
Initial – Sold = 108ml		Initial	4	:	5		
Remaining = 108ml	Remaining		4	:		5	108 ml
			48 ml		60 ml		
		Final	57	:	60		
			57 ml		60 ml		117ml

Initial = Final= 117ml, since there is a replacement

X = 9ml

Quantity of milk in the final mixture = $\left(52-\frac{4}{9}\times 9\right)+9=57$ ml

S60. Ans.(c)

Sol.

Let the quantity of milk and water be 4p and 5p respectively

Let x = 9a

ATQ,

$\frac{\left[\left(4p-\frac{4}{9}\times 9a\right)+9a\right]}{5p-\frac{5}{9}\times 9a}=\frac{57}{60}$

$\frac{4p+5a}{5p-5a}=\frac{57}{60}$

$\frac{4p+5a}{5(p-a)}=\frac{57}{60}$.....(1)

Another condition of question

9p – 108 = 9a

p – a = 12 .....(2)

Now putting value of (2) in (1)

$\frac{4p+5a}{5(p-a)}=\frac{57}{60}$

$\frac{4p+5a}{5\times 12}=\frac{57}{60}$

4p + 5a = 57.....(3)

From eq. (3) & (2)

p = 12

a = 1

Initial quantity of mixture = 9p = 117 ml

Initial quantity of milk = 52 ml

Initial quantity water = 65 ml

Quantity of mixture sold = x = 9a = 9 ml

QUICKER APPROACH

Sold = Initial – 108ml			Milk		Water		Total
Initial – Sold = 108ml		Initial	4	:	5		
Remaining = 108ml	Remaining		4	:		5	108 ml
			48 ml		60 ml		
		Final	57	:	60		
			57 ml		60 ml		117ml

Initial = Final= 117ml, since there is a replacement

X = 9ml

Let the height of the right circular cylinder be h cm
Volume of right circular cylinder = 117 + 37 = 154 cm^3
$\frac{22}{7} \times 0.7 \times 0.7 \times h = 154$
h = 100 cm

S61. Ans.(a)

Sol.

From statement (I)
Simple interest = Rs 3000
$10000 \times \frac{R}{100} \times 3 = Rs.3000$
R = 10%
From this we can't find the value of t

From statement (II)
Let amount he invested be Rs.P
$\left(P \times \frac{X}{100} \times 4\right) - P(1 + \frac{X}{100})^t + P = 1900$
From this we can't find the value of t
So, neither statement **(I)** nor statement **(II)** by itself is sufficient to answer

S62. Ans.(e)

Sol.

Let time taken by A and B to complete the work be 2a and 5a respectively
Time taken by A to complete the work is X
2a = X
$a = \frac{X}{2}$
B complete the work in $\frac{5}{2}X$
C destroys the work in X + 5
Total time taken by all of them to complete the work is 6 hrs.
From statement (I)
A can do $\frac{8}{9}th$ work in = 16 hrs
A completed the work in = 18 hrs.
X = 18
C destroyed the completed work = 18 + 5 = 23 hrs.
So, statement (I) alone is sufficient to answer
Statement (II)
Efficiency of B to C is 5:1.
We can't find the time taken by C to completely destroy the work.
Hence, only statement (I) alone can solve the question.

S63. Ans.(b)

Sol.

From equation (i)

Largest even prime number is 2

C = 2

$\sqrt[b]{A^b} \times (2 + 1) = 24$

$A^{\frac{b}{b}} \times 3 = 24$

A = 8

From statement (I)

Roots of the equation are(m-1) and (m+1)

This statement was wrong

From statemnt (II)

A = 8

8 = Y + 5

3 = Y

And

3X + 8 = 14

X = 2

Required sum = 8 + 3 + 2 = 13

Hence, statement (II) alone is sufficient to answer

S64. Ans.(a)

Sol.

Percentage of share of U = 100% - (15 + 20 + 10 + 25 + 5)% = 25%

Share of P = $\frac{15}{100} \times 3{,}60{,}000 = Rs.\,54{,}000$

Similarly,

Person	Share of stocks
P	Rs. 54,000
Q	Rs. 72,000
R	Rs. 36,000
S	Rs. 90,000
T	Rs. 18,000
U	Rs. 90,000

Let the % increment for both the years be x

Cumulative increment = 82.25%

$x + x + \frac{x \times x}{100} = 82.25$

$200x + x^2 = 82.25 \times 100$

$x^2 + 200x - 8225 = 0$

$x^2 + 235x - 35x - 8225 = 0$

x= -235, 35

Negative value cannot be taken because there is increment

x = 35

Return from T after 1 year = $\frac{35}{100} \times 18000 = Rs\ 6{,}300$

Return from S after 1 year = $\frac{20}{100} \times 90000 = Rs.\ 18{,}000$

Required sum = 6300 + 18000 = Rs. 24,300

S65. Ans.(c)

Sol.

Percentage of share of U = 100% - (15 + 20 + 10 + 25 + 5)% = 25%

Share of P = $\frac{15}{100} \times 3{,}60{,}000 = Rs.\ 54{,}000$

Similarly,

Person	Share of stocks
P	Rs. 54,000
Q	Rs. 72,000
R	Rs. 36,000
S	Rs. 90,000
T	Rs. 18,000
U	Rs. 90,000

Return from Q after 2 years = $\frac{69}{100} \times 72{,}000 = Rs.\ 49{,}680$

Let the % increment for Q is x

Cumulative increment = 69%

$x + x + \frac{x \times x}{100} = 69$

$200x + x^2 = 6900$

$x^2 + 200x - 6900 = 0$

$x^2 - 30x + 230x - 6900 = 0$

x = 30, -230

Negative value cannot be taken because there is increment

x = 30

Return from Q after 1 year = $\frac{30}{100} \times 72000 = Rs.\ 21{,}600$

Required return = 49680 – 21600 = Rs. 28,080

S66. Ans.(d)

Sol.

Percentage of share of U = 100% - (15 + 20 + 10 + 25 + 5)% = 25%

Share of P = $\frac{15}{100} \times 3{,}60{,}000 = Rs.\ 54{,}000$

Similarly,

Person	Share of stocks
P	Rs. 54,000
Q	Rs. 72,000
R	Rs. 36,000
S	Rs. 90,000
T	Rs. 18,000
U	Rs. 90,000

Return from P = $\frac{21}{100} \times 54{,}000$ = Rs. 11,340

Return from S = $\frac{44}{100} \times 90{,}000 = Rs.39{,}600$

Sum invested = Rs. 11,340 + Rs. 39,600 = Rs. 50,940

Cumulative interest rate = $(20 + 20 + \frac{20\times20}{100})\% = 44\%$

Compound interest = $50{,}940 \times \frac{44}{100}$ = Rs.22413.6

S67. Ans.(e)

Sol.

Let total number of wooden buckets sold by S in May = x

Let total wooden buckets sold by R in May = $x\times \frac{300}{100} = 3x$

So, total number of plastics buckets sold by R in May = 240 – 3x

And, total plastic buckets sold by S in May = 150 – x

Given, total number of plastic buckets sold by R in May are more than number of plastic buckets sold by S in May

240 – 3x > 150 – x

So, 90 > 2x ------ (i)

From (i) $45 > x$

Multiply by 3 in both side

$135 > 3x$

We need $-3x$, so take '$-$' in both side

$-135 < -3x$

240 – 135 < 240 – 3x

$105 < (240-3x)$

S68. Ans.(b)

Sol.

Total plastic buckets sold by P in June = $160 \times \frac{40}{100} = 64$

And total defective plastic buckets sold by P in June = $64 \times \frac{1}{8} = 8$

Total non-defective plastic buckets sold by P in June = 64 – 8 = 56

Total defective wooden buckets sold by P in June buckets sold by = $(160\text{-}64)\times \frac{25}{100} = 24$

Total non-defective wooden buckets sold by P in June =96 – 24 = 72

Total wooden buckets sold by Q in June = $(72-56) \times \frac{150}{100} = 24$

So, total plastic buckets sold by Q in June = $(96 - 24) = 72$

Required percentage = $\frac{72}{120} \times 100 = 60\%$

S69. Ans.(c)

Sol.

Total number of plastic buckets sold by T in May = 4× (120 – 96) = 96

So, total wooden buckets sold by T in May = $168 - 96 = 72$

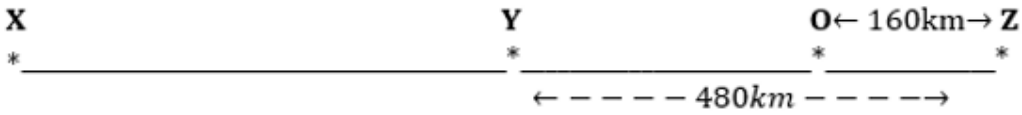
Total buckets sold by T in June = 192

Given, number of wooden buckets sold by T in June > total wooden buckets sold by T in May and it also a perfect square of even number

So, number of wooden buckets sold by T in June > 72
Only possible value of number of wooden buckets sold by T in June = 100 and 144
Minimum average asked in the question
So, number of wooden buckets sold by T in June should be 144
So, total plastic buckets sold by T in June = 192 – 144 = 48
Required average = $\frac{72+48}{2}$ = 60

S70. Ans.(e)

Sol.



Let t1, t2 and t3 is the speed of train T1, T2 and T3 respectively
And distance between station X and Y is 'd' km
We know, when all three train leaves station X for station Y in equal time intervals and reach station Y simultaneously (at same time), then the difference between time taken by trains T1 & T2 should be the difference between time taken by trains T2 & T3
So, $\frac{d}{t1}-\frac{d}{t2}=\frac{d}{t2}-\frac{d}{t3}$ --------- (i)
Also given, $\frac{480}{t1}-\frac{480}{t2}=2$ ------- (ii)
And, T3 covered (480+160) = 640 km, when T1 covered (480-160) = 320 km
So, $\frac{640}{t3}=\frac{320}{t1}$
t3 = 2t1
From (i) , $\frac{d}{t1}-\frac{d}{t2}=\frac{d}{t2}-\frac{d}{2t1}$
So, t2 = $\frac{4t1}{3}$
Putting value of t2 in (ii)
2t1 = 120
t1 = 60 km/hr
So, t3 = 120 km/hr
Required time = $\frac{(480-160)}{120}\times 60$ = 160 minutes

S71. Ans.(d)

Sol. All statements (i), (ii) and (iii) are correct as they all reflect concerns regarding the impact of IT on the economy and jobs mentioned in the passage.

S72. Ans.(a)

Sol. Among the given alternatives, only option (a) is correct. While the rest of the statements are incoherent with reference to the information provided. Refer to the concluding lines of the second paragraph for more clarity. Doctors can now access patient data remotely and collaborate with specialists from around the world.

S73. Ans.(b)
Sol. By referring to the information given in the second paragraph, we can infer that information technology has had a largely positive impact on the nature of work, as it has enabled greater productivity and the emergence of new jobs. While some jobs may become obsolete, IT has created new opportunities and transformed how people work, communicate, and collaborate.

S74. Ans.(b)
Sol. Among the given alternatives, only option (b) is correct. While the rest of the statements are incoherent with reference to the information provided. Refer to the seventh line of the third paragraph for more clarity.

S75. Ans.(c)
Sol. Among the given alternatives, only option (c) is correct. Refer to the starting lines of the third paragraph, "One of the biggest challenges is data privacy and security. As more and more personal information is stored and shared online, the risk of data breaches and identity theft also increases."

S76. Ans.(b)
Sol. Among the given alternatives, only option (b) is correct. Refer to the mid-lines of the first paragraph for more clarity. One of the most significant implications of IT is its impact on the way we communicate and access information. Information technology has enabled individuals to connect with others, share their ideas, and access vast amounts of information from anywhere in the world.

S77. Ans.(d)
Sol. The correct answer is (d) All of these. Information technology has brought about significant changes in the world of business. It has enabled companies to streamline operations, reach new customers, and tailor their products and services to meet individual needs. Refer to the concluding lines of the third paragraph for more clarity.

S78. Ans.(b)
Sol. The most similar word in meaning to "blurred" is (b) obscured, as both words suggest a lack of clarity or definition.
(a) Inflated: enlarged or increased beyond what is reasonable or normal; exaggerated or overblown.
(c) Abridged: shortened or condensed by leaving out some parts or details; summarized.
(d) Curtailed: reduced or limited in quantity, extent, or scope; shortened or cut back.
(e) Dilated: expanded or widened, often referring to pupils of the eyes that have become larger in response to light or other stimuli.

S79. Ans.(b)
Sol. The paragraph contains two errors:
The first sentence should be "involves focusing one's attention" instead of "involves focus one's attention." This is because the verb "involve" requires the gerund form (-ing form) of the verb to follow it. In this case, the gerund form of "focus" is "focusing."
The second sentence should be "Studies have shown" instead of "Studies shown." This is because the present perfect tense ("have shown") is needed to show that the action began in the past and has continued up to the present. Without the auxiliary verb "have," the sentence is incomplete and grammatically incorrect.

S80. Ans.(c)
Sol. The paragraph contains three errors:
"Which can lead to the more innovation and creativity" should be "which can lead to more innovation and creativity." The use of "the" before "more" is incorrect, as "more" is being used as an adverb.
"Help to eliminate biases" should be "help eliminate biases." The infinitive verb "to" is not needed in this sentence, as the verb "help" is already being used to convey the intended meaning.
"Companies that prioritize diversity and inclusion tends" should be "Companies that prioritize diversity and inclusion tend." The subject "companies" is plural, and so it requires the plural form of the verb "tend."

S81. Ans.(d)
Sol. The paragraph contains four errors:
"there own pace" should be "their own pace" - "there" is used to indicate a place, while "their" is a possessive pronoun indicating ownership.
"from courses and programs" should be "of courses and programs" - "with a wide range of courses and programs available" is the correct phrase.
"and pursue there interests" should be "and pursue their interests" - "there" is incorrect, and it should be "their" as it indicates ownership.
"cost effective then" should be "more cost-effective than" - "then" should be replaced with "than" to properly indicate a comparison.

S82. Ans.(a)
Sol. This paragraph contains one error. "has shown" in the first line should be replaced with "has been shown" to form a complete verb phrase in the passive voice.

S83. Ans.(b)
Sol. There are two errors in this paragraph:
"While technology have brought many benefits" should be "While technology has brought many benefits", since "technology" is a singular noun and requires the singular verb "has".
"Consider the ethical and social implications of their use" should be "Consider the ethical and social implications of its use", since "technology" is a singular noun and requires the singular pronoun "its".

S84. Ans.(c)
Sol. Sentence (D) provides an introduction to the topic, explaining that John has had a unique experience with language learning. Sentence (B) then provides more information about his upbringing in a multilingual household, which sparked his interest in language learning. Sentence (F) builds on this, explaining that exposure to multiple languages at an early age ignited John's passion for exploring different linguistic cultures. Sentence (A) then describes how John's interest in foreign languages continued as he grew older, and he studied languages in school and on his own. Sentence (E) elaborates on John's natural talent for language learning, explaining that he was able to quickly pick up new vocabulary and grammar rules. Finally, sentence (C) describes how John's passion and hard work led to him becoming fluent in several languages and even pursuing a career as a translator. The sentences are linked together in a logical and chronological sequence, with each sentence building on the previous one to provide a comprehensive overview of John's experience with learning foreign languages. Thus, the correct rearrangement of the given sentences would be DBFAEC.

S85. Ans.(d)

Sol. Sentence (D) provides an introduction to the topic, explaining that John has had a unique experience with language learning. Sentence (B) then provides more information about his upbringing in a multilingual household, which sparked his interest in language learning. Sentence (F) builds on this, explaining that exposure to multiple languages at an early age ignited John's passion for exploring different linguistic cultures. Sentence (A) then describes how John's interest in foreign languages continued as he grew older, and he studied languages in school and on his own. Sentence (E) elaborates on John's natural talent for language learning, explaining that he was able to quickly pick up new vocabulary and grammar rules. Finally, sentence (C) describes how John's passion and hard work led to him becoming fluent in several languages and even pursuing a career as a translator. The sentences are linked together in a logical and chronological sequence, with each sentence building on the previous one to provide a comprehensive overview of John's experience with learning foreign languages. Thus, the correct rearrangement of the given sentences would be DBFAEC.

S86. Ans.(e)

Sol. Sentence (D) provides an introduction to the topic, explaining that John has had a unique experience with language learning. Sentence (B) then provides more information about his upbringing in a multilingual household, which sparked his interest in language learning. Sentence (F) builds on this, explaining that exposure to multiple languages at an early age ignited John's passion for exploring different linguistic cultures. Sentence (A) then describes how John's interest in foreign languages continued as he grew older, and he studied languages in school and on his own. Sentence (E) elaborates on John's natural talent for language learning, explaining that he was able to quickly pick up new vocabulary and grammar rules. Finally, sentence (C) describes how John's passion and hard work led to him becoming fluent in several languages and even pursuing a career as a translator. The sentences are linked together in a logical and chronological sequence, with each sentence building on the previous one to provide a comprehensive overview of John's experience with learning foreign languages. Thus, the correct rearrangement of the given sentences would be DBFAEC.

S87. Ans.(e)

Sol. Sentence (D) provides an introduction to the topic, explaining that John has had a unique experience with language learning. Sentence (B) then provides more information about his upbringing in a multilingual household, which sparked his interest in language learning. Sentence (F) builds on this, explaining that exposure to multiple languages at an early age ignited John's passion for exploring different linguistic cultures. Sentence (A) then describes how John's interest in foreign languages continued as he grew older, and he studied languages in school and on his own. Sentence (E) elaborates on John's natural talent for language learning, explaining that he was able to quickly pick up new vocabulary and grammar rules. Finally, sentence (C) describes how John's passion and hard work led to him becoming fluent in several languages and even pursuing a career as a translator. The sentences are linked together in a logical and chronological sequence, with each sentence building on the previous one to provide a comprehensive overview of John's experience with learning foreign languages. Thus, the correct rearrangement of the given sentences would be DBFAEC.

S88. Ans.(d)

Sol. Sentence (D) provides an introduction to the topic, explaining that John has had a unique experience with language learning. Sentence (B) then provides more information about his upbringing in a multilingual household, which sparked his interest in language learning. Sentence (F) builds on this, explaining that exposure to multiple languages at an early age ignited John's passion for exploring different linguistic cultures. Sentence (A) then describes how John's interest in foreign languages continued as he grew older, and he studied languages in school and on his own. Sentence (E) elaborates on John's natural talent for language learning, explaining that he was able to quickly pick up new vocabulary and grammar rules. Finally, sentence (C) describes how John's passion and hard work led to him becoming fluent in several languages and even pursuing a career as a translator. The sentences are linked together in a logical and chronological sequence, with each sentence building on the previous one to provide a comprehensive overview of John's experience with learning foreign languages. Thus, the correct rearrangement of the given sentences would be DBFAEC.

S89. Ans.(b)

Sol. Sentence (D) provides an introduction to the topic, explaining that John has had a unique experience with language learning. Sentence (B) then provides more information about his upbringing in a multilingual household, which sparked his interest in language learning. Sentence (F) builds on this, explaining that exposure to multiple languages at an early age ignited John's passion for exploring different linguistic cultures. Sentence (A) then describes how John's interest in foreign languages continued as he grew older, and he studied languages in school and on his own. Sentence (E) elaborates on John's natural talent for language learning, explaining that he was able to quickly pick up new vocabulary and grammar rules. Finally, sentence (C) describes how John's passion and hard work led to him becoming fluent in several languages and even pursuing a career as a translator. The sentences are linked together in a logical and chronological sequence, with each sentence building on the previous one to provide a comprehensive overview of John's experience with learning foreign languages. Thus, the correct rearrangement of the given sentences would be DBFAEC.

S90. Ans.(e)

Sol. All the highlighted words are placed in their correct positions. Thus, no replacement is required.

Concert means a public musical performance or a formal agreement between two or more parties.

Scalper means a person who buys and sells tickets for events, especially sports or music events, at a higher price than the face value.

Spurious means false or fake, not genuine or authentic.

S91. Ans.(b)

Sol. The correct option to connect the two sentences without changing the intended meaning is (b) "but". The first sentence talks about obtaining tickets from a scalper because the concert was sold out. The conjunction "but" in the second sentence introduces a contrasting idea that the tickets turned out to be spurious, and they had to find a way to get their money back. While the rest options are grammatically and contextually incorrect.

The sentence thus formed would be: “The concert was sold out, so we had to obtain tickets from a scalper, but the tickets turned out to be spurious, so we had to find a way to get our money back.”

S92. Ans.(b)

Sol. Among the given options, "(A)- (D) and (C)- (F)" should replace each other to make both sentences contextually correct.

Dismayed: It means to feel distressed, disappointed, or discouraged by something that has happened, or to lose confidence or hope in a situation.

Adored: It means to love or worship someone or something deeply and affectionately.

Reparation: It means the act of making amends for a wrong or injury, or the action of repairing something.

Sublime: It means something of outstanding beauty or excellence, inspiring awe or admiration.

S93. Ans.(a)

Sol. The correct option to connect the two sentences without changing the intended meaning is (a) "however". The first sentence describes the park as sublime and enjoyable, while the second sentence introduces a contrasting idea that the main attraction was closed for reparation and they were dismayed. The use of "however" shows the contradiction between the positive experience of the park and the disappointment of the closed attraction. While the rest options are grammatically and contextually incorrect.

The sentence thus formed would be: "The park was sublime, and we adored walking around and taking in the scenery; however, we were dismayed to find out that the main attraction was closed for reparation."

S94. Ans.(c)

Sol. Among the given alternatives, only sentence (c) is correct with reference to the context of the given question. Refer to the starting line of the second paragraph which states that the author's most memorable day was the day he became a parent, holding his newborn child in his arms for the first time.

S95. Ans.(a)

Sol. Among the given alternatives, only sentence (a) is correct with reference to the context of the given question. Refer to the third line of the third paragraph, "It was a reminder of how fragile life can be and how important it is to cherish the time we have with the people we love."

S96. Ans.(b)

Sol. Among the given alternatives, only sentence (b) is correct with reference to the context of the given question. Refer to the fifth line of the third paragraph, "However, I have learned that each challenge provides an opportunity for growth and resilience."

S97. Ans.(a)

Sol. Among the given alternatives, only sentence (a) is correct with reference to the context of the given question. Refer to the third line of the first paragraph which states that the author's experience on the day he got married was a day of celebration surrounded by family and friends.

S98. Ans.(b)

Sol. Among the given alternatives, only sentence (b) is correct with reference to the context of the given question. Refer to the sixth line of the second paragraph, "One of the biggest challenges I faced was when I lost my job during a period of economic recession."

S99. Ans.(e)
Sol. The phrase means that during a challenging period, the speaker received support and encouragement from his family and friends, which helped him to keep going and overcome the difficulties.

S100. Ans.(c)
Sol. The option that is most similar in meaning to the word "fragile" is (c) "gossamer". The word "fragile" means easily broken or delicate, while "gossamer" means something that is light, delicate, and filmy in texture or substance. Both words describe something that is delicate and easily damaged.
Option (a) "vindictive" means having or showing a strong or unreasoning desire for revenge, which is not similar in meaning to "fragile".
Option (b) "pungent" means having a sharply strong taste or smell, which is not related in meaning to "fragile".
Option (d) "persistent" means continuing to exist or endure over a prolonged period, which is not similar in meaning to "fragile".
Option (e) "splenetic" means irritable or bad-tempered, which is not related in meaning to "fragile".

S101. Ans.(d)
Sol. The correct rearrangement of the phrases to make the sentence grammatically correct and contextually meaningful would be CBAD. The sentence thus formed would be: "The history of humanity is a story of triumphs and tragedies, all of which have shaped the world we live in today and offer valuable lessons for the future."

S102. Ans.(d)
Sol. The correct rearrangement of the phrases to make the sentence grammatically correct and contextually meaningful would be CADB. The sentence thus formed would be: "The universe is an endless expanse of mystery and wonder, with billions of galaxies and trillions of stars, each one a burning beacon of light in the vastness of space."

S103. Ans.(d)
Sol. Among the given alternatives, option (d) is the contextual option that correctly fills the blank and relates to the topic of making informed decisions about resource allocation and global challenges.

S104. Ans.(b)
Sol. Among the given alternatives, option (b) is the contextual option that correctly fills the blank and relates to the topic of the importance of sleep.

S105. Ans.(b)
Sol. Among the given alternatives, option (b) is the contextual option that correctly fills the blank and relates to the topic of success in the field of medicine.