

RRB PO Pre 2022 (21st August) Shift-Wise Previous Year Paper Mock 05

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

Uncertain number of persons is sitting in a row facing north. Q sits fifth to the right of V. Three persons sit between V and A. S sits fifth to the left of A. Only one person sits between V and D. X sits third to the right of D. Only three persons sit between X and C. Q is third from the right end. Only six persons sit between P and T. P is an immediate neighbour of X. S is not the immediate neighbor of D.

Q1. If S sits at the extreme left end, then how many persons are sitting in the row?

- (a) 11
- (b) 17
- (c) 13
- (d) 14
- (e) 12

Q2. If B sits exactly between T and S then what is the position of B with respect to A?

- (a) Third to the left
- (b) Third to the right
- (c) Second to the left
- (d) Fourth to the right
- (e) None of these

Q3. How many persons sit between S and the one who sits immediate left of X?

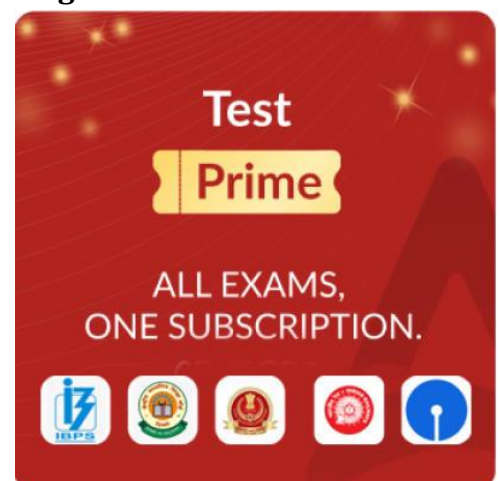
- (a) Nine
- (b) Seven
- (c) Eight
- (d) Ten
- (e) None of these

Q4. If R sits third to the left of S, then how many persons are sitting between R and D?

- (a) Twelve
- (b) Ten
- (c) Fifteen
- (d) Nine
- (e) None of these


Q5. Who among the following sits fifth to the right of A?

- (a) S
- (b) P
- (c) R
- (d) X
- (e) Q



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Directions (6-8): In these questions relationship between different elements is shown in the statements. These statements are followed by conclusions. You have to find out which of the conclusions follow or not from the given statements.

Q6.

Statements:

$$F = E \leq B, A < D > B > C$$

Conclusions:

I. $E > A$

II. $A \geq F$

- (a) Only I is true
- (b) Only II is true
- (c) Either I or II is true
- (d) Both I and II are true
- (e) Neither I nor II is true

Q7.

Statements:

$$X > Y \geq Z = M > A \geq B$$

Conclusions:

I. $B < Y$

II. $Y > A$

- (a) Only I is true
- (b) Only II is true
- (c) Either I or II is true
- (d) Both I and II are true
- (e) Neither I nor II is true

Q8.

Statements:

$$P < Q > R = Z \leq X = T$$

Conclusions:

I. $T > Z$

II. $Z = T$

- (a) Only I is true
- (b) Only II is true
- (c) Either I or II is true
- (d) Both I and II are true
- (e) Neither I nor II is true

Directions (9-11): In each question below are given two/three statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Give answer-

Q9. Statements:

Some prime are consonant.

All consonant are cup.

No cup is a cap.

Conclusions:

I. Some consonant being cap is a possibility.

II. All cup being prime is a possibility.

- (a) If only conclusion I follows.
- (b) If only conclusion II follows.
- (c) If either conclusion I or II follows.
- (d) If neither conclusion I nor II follows,
- (e) If both conclusions I and II follow.

Q10. Statements:

Some prime are consonant.

All consonant are cups.

No cup is a cap.

Conclusions:

I. No cap is consonant.

II. Some prime are not caps.

- (a) If only conclusion I follows.
- (b) If only conclusion II follows.
- (c) If either conclusion I or II follows.
- (d) If neither conclusion I nor II follows,
- (e) If both conclusions I and II follow.

Q11. Statements: All number is digits.

No digit is a numeric.

Conclusions:

I. Some number is not numeric.

II. No number is a numeric.

- (a) If only conclusion I follows.
- (b) If only conclusion II follows.
- (c) If either conclusion I or II follows.
- (d) If neither conclusion I nor II follows,
- (e) If both conclusions I and II follow.

Directions (12-16): Study the following information to answer the given questions:

Twelve persons are sitting in two parallel rows containing six persons in each row in such a way that there is an equal distance between adjacent persons. In the first row- A, B, C, D, E and F are seated and all of them are facing south. In the second row- P, Q, R, S, T and V are seated and all of them are facing north. Therefore, in the given seating arrangement, each member seated in a row faces another member of the other row.

D sits third to the right of B. Either D or B sits at an extreme end of the line. The one who faces B sits second to right of T. Two people sit between Q and V. Neither Q nor V sits at an extreme end of the line. The immediate neighbour of Q faces the person who sits third to left of A. R sits second to the left of P. C and E are immediate neighbours of each other. E does not face the immediate neighbour of S.

Q12. Who among the following person sits third to the right of C?

- (a) B
- (b) D
- (c) F
- (d) A
- (e) None of these

Q13. How many persons sit between V and S?

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

Q14. The number of persons sits between A and E is same as the number of persons sits between ___ and ___.

- (a) Q, T
- (b) R, V
- (c) D, C
- (d) P, S
- (e) None of these

Q15. Who among the following sits second to the right of P?

- (a) V
- (b) S
- (c) Q
- (d) T
- (e) None of these

Q16. Who among the following sits opposite to V?

- (a) E
- (b) C
- (c) D
- (d) F
- (e) None of these

Directions (17-19): Study the following information carefully and answer the given questions.

Point D is 14 m towards the West of Point A. Point B is 4 m towards the South of point D. Point F is 9 m towards the South of point D. Point E is 7 m towards the East of point B. Point C is 4 m towards the North of point E. Point G is 4 m towards the South of point A.

Q17. Which of the following points are in a straight line?

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

Q18. Point A is in which direction with respect to Point C?

- (a) East
- (b) West
- (c) North
- (d) South
- (e) Cannot be determined

Q19. If a person walks 5 m towards North from point F and takes a right turn, then which of the following points would he reach first?

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

Q20. The position of how many alphabets will remain unchanged if each of the alphabets in the word 'MULTINATIONAL' is arranged in alphabetical order from left to right?

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

Q21. Four of the following five are alike in a certain way so form a group, which of the following does not belong to that group?

- (a) LMR
- (b) DEJ
- (c) TUZ
- (d) KLP
- (e) FGL

Directions (22-26): Study the following information carefully to answer the given questions:

Twelve persons are appearing for an exam on 16th and 27th of the six different months of the same year viz. January, February, April, May, October and November.

R has exam on an odd date. Six persons give exams between R and F. Three persons give exams between H and F. R does not give his exam in February. No one gives exam after M. S and N have exams in the same month but not in the month which has 30 days. S and R have exams on different dates. N does not give exam after H. G gives exam immediately after W and in the month which has 30 days. Only four persons give exam between G and P who has exam after R. T has exam before V and both give exams on the same date. U and R has exam on different dates.

Q22. How many persons have exam after V?

- (a) Three
- (b) Four
- (c) Two
- (d) More than four
- (e) None of these

Q23. Which of the following pair of persons have exam in February?

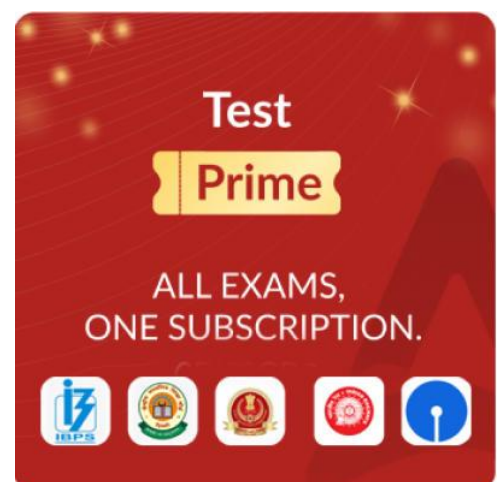
- (a) W, M
- (b) P, M
- (c) H, V
- (d) W, G
- (e) F, T

Q24. Four of the following five are alike in a certain way so form a group, who among the following does not belong to that group?

- (a) F
- (b) W
- (c) U
- (d) S
- (e) T

Q25. Who among the following person appears for exam immediately before N?

- (a) P
- (b) U
- (c) V
- (d) S
- (e) None of these



Q26. Who among the following has exam on 27th May?

- (a) V
- (b) U
- (c) W
- (d) T
- (e) None of these

Directions (27-29): Study the following information carefully to answer the given questions:

There are seven members in a family P, R, M, K, T, O and S among them only two are married couples. M is the grandson of R and has sibling. K is the daughter of S who is daughter-in-law of P. R has only two children. P is mother of O. T is a female member of the family.

Q27. Who among the following is daughter-in-law of R?

- (a) T
- (b) S
- (c) K
- (d) Cannot be determined
- (e) None of these

Q28. How K is related to O?

- (a) Niece
- (b) Sister
- (c) Daughter
- (d) Aunt
- (e) None of these

Q29. If T is married to N, then how N is related to P?

- (a) Nephew
- (b) Son
- (c) Son-in-law
- (d) Father-in-law
- (e) None of these

Directions (30-34): Study the following information to answer the given questions:

Eight persons are living on different floors of an eight-storey building. The ground floor is numbered as 1 and the topmost floor is numbered as 8. Four persons live between A and C who lives on an even numbered floor. H lives on an odd numbered floor. Two persons live between A and B. Three persons live between E and D who lives on an odd numbered floor above B's floor. More than four persons live between F and G who lives above F's floor.

Q30. Who among the following person lives on 5th floor?

- (a) F
- (b) D
- (c) B
- (d) H
- (e) None of these

Q31. How many persons live below C's floor?

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

Q32. On which of the following floor does F live?

- (a) 6th floor
- (b) 7th floor
- (c) 2nd floor
- (d) 4th floor
- (e) None of these

Q33. The number of persons live between D and H is same as the number of persons live between ___ and ___.

- (a) E, A
- (b) H, A
- (c) D, C
- (d) B, G
- (e) None of these

Q34. Which of the following statement is true about G?

- (a) H lives immediately below G's floor
- (b) Not more than four persons live below G's floor
- (c) Only two persons live between G and B
- (d) G lives on an odd numbered floor
- (e) None is true

Directions (35-39): Study the following information carefully and answer the given questions:

Eight students E, F, G, H, J, K, L and M are studying in three different universities viz. BHU, JNU and DU. At least two but not more than three students are studying in the same university. Each of them is doing different degrees viz. M.Sc., M.A. and M. Com, at least two but not more than three students are doing same degree.

L is doing M.Sc. H is doing M.A. and studying in JNU with only J. E and F are not studying in DU and doing the same degree but not M.A. G is doing M.Sc. and studying in DU with M who is doing M.A. L and G are not studying in the same university. K is not doing M.Com. J is doing M.Sc.

Q35. Which of the following combinations is correct?

- (a) E – M.Sc.
- (b) F – M. Com
- (c) K – M.Sc.
- (d) F – M.Sc.
- (e) None of these

Q36. Which among the following pair of persons are doing M.A.?

- (a) M, K
- (b) H, K
- (c) Both (a) and (b)
- (d) E, M
- (e) None of these

Q37. Who among the following students are studying in BHU?

- (a) E, K
- (b) F, K
- (c) K, L
- (d) E, F
- (e) None of these

Q38. In which of the following university K is studying?

- (a) BHU
- (b) JNU
- (c) DU
- (d) Cannot determined
- (e) None of these

Q39. Four of the following five belong to a group in a certain way, find which of the one does not belong to that group?

- (a) E – BHU – M.Sc.
- (b) L – BHU – M.Sc.
- (c) F – JNU – M.Com
- (d) K – DU – M.Sc.
- (e) E – JNU – M.Com

Q40. Among A, B, C, D and E, each of them has different weights. D's weight is more than only three persons. B's weight is more than E and less than C. C is not lighter than D. A is heavier than B. Who among them is the third heaviest?

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

Directions (41-45): The table given below shows total number of Android mobiles & IOS mobiles available at three different stores P, Q and R and the table shows the percentage of total mobiles (Android mobiles + IOS mobiles) sold by these stores out of total available mobiles. Read the data carefully and answer the questions.

Stores	Android mobiles	IOS mobiles	Percentage of total mobiles (Android mobiles + IOS mobiles) sold
P	400	300	20%
Q	600	400	40%
R	500	400	30%

Q41. The number of 'Android mobiles' sold by store P and store Q is 30% and 40% respectively. Find the total 'IOS mobiles' sold by store P and Q together?

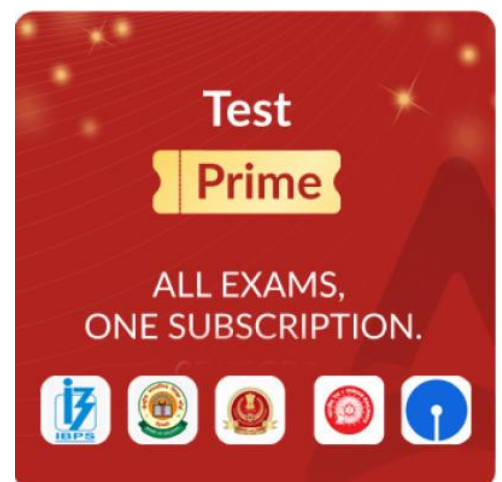
- (a) 180
- (b) 140
- (c) 160
- (d) 200
- (e) 240

Q42. The average number of mobiles sold by store Q and store R together is how much more or less than total unsold mobiles by store P?

- (a) 175
- (b) 195
- (c) 165
- (d) 145
- (e) 225

Q43. If the ratio of total 'Android mobiles' to total 'IOS mobiles' sold by stores R and Q is 5 : 4 and 3 : 2 respectively, then find the total number of 'Android mobiles' sold by store R & Q together?

- (a) 450
- (b) 420
- (c) 350
- (d) 390
- (e) 320



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Logos of various educational institutions: IIT, IIS, IIM, IITM, IITK, IITR, IITB, IITD, IITG, IITJ, IITKGP, IITKGN, IITKGN, IITKGN, IITKGN.

Q44. Total unsold mobiles of store P is what percent (approximate) of the total unsold mobiles of store Q & R together?

- (a) 65%
- (b) 60%
- (c) 40%
- (d) 55%
- (e) 45%

Q45. Find the total number of mobiles sold by all three stores P, Q & R together?

- (a) 720
- (b) 780
- (c) 810
- (d) 840
- (e) 880

Q46. A man has 250 l milk and each time he takes out 25 l of milk and replaced it with same quantity of water. If he repeats this process thrice then find quantity of milk in final solution (in liter).

- (a) 162.225
- (b) 182.25
- (c) 142.25
- (d) 122.25
- (e) 102.25

Q47. Ratio of volume of two spheres is 27 : 64 and radius of larger sphere is 14 cm. If radius of smaller sphere is 7.5 cm less than side of a square, then find the area of that square (in cm^2)?

- (a) 225
- (b) 484
- (c) 625
- (d) 324
- (e) 361

Q48. Adarsh is two years older than Ayush and ratio of present age of Adarsh and Sameer is 13 : 15 and. If ratio between age of Ayush & Sameer after three years is 9 : 11, then find the difference between Adarsh age after five years & Sameer's present age (in year)?

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

Q49. Two cards are drawn randomly from a pack of 52 cards. Then, find the probability of getting at least one 1 red king and 1 black king, if replacement is not allowed.

- (a) $\frac{1}{676}$
(b) $\frac{1}{169}$
(c) $\frac{4}{663}$
(d) $\frac{1}{663}$
(e) $\frac{3}{676}$

Q50. A shopkeeper gives one article free at purchase of every four article and also allows 10% discount. If he wants to earn 8% profit then find market price is what percent of cost price of each article.

- (a) 150%
(b) 50%
(c) 100%
(d) 75%
(e) 20%

Q51. Upstream speed of a boat is $62\frac{1}{2}\%$ of downstream speed of that boat and boat takes 1.5 hours more to cover a distance of 65 km in upstream than that in still water. Find speed of stream?

- (a) 6 km/hr
(b) 3 km/hr
(c) 5 km/hr
(d) 4 km/hr
(e) 3.5 km/hr

Q52. Hemant invest 1800 Rs at rate of 5% and $x\%$ per annum in ratio 4 : 5 respectively. At the end of 2 year, he will get total Rs 160 as SI. Find value of x

- (a) 4%
(b) 6%
(c) 8%
(d) 4.5%
(e) 3%

Q53. A train of length 1.6 km crosses a pole in 3 min. Another train coming from opposite direction with speed of 50 km/h can cross first train in $2\frac{8}{41}$ min Find length of train which has speed of 50 km/h.

- (a) 1.4 km
- (b) 1.2 km
- (c) 1.8 km
- (d) 3 km
- (e) 2 km

Q54. Manoj's monthly income is Rs. 5000. Due to 10% increase in his income his expenditure is increased by 18% and savings are reduced by 2%. Find his initial expenditure. (In Rs.)

- (a) 3480
- (b) 3040
- (c) 3000
- (d) 3140
- (e) 3080

Q55. The average weight of seven students in a class is 26.5 kg. When a new student joins them, the average weight increases by 2.5 kg. Find the weight of the new student? (in kg)

- (a) 46.5
- (b) 43.5
- (c) 48.5
- (d) 39.5
- (e) 41.5

Directions (56-61): Find the approximate value of question marks (?) in following questions?

Q56. $24.92\% \text{ of } 180.01 + (18.96)^2 = ? \% \text{ of } 1014.89$

- (a) 30
- (b) 60
- (c) 50
- (d) 40
- (e) 70

Q57. $(29.02)^2 = (?)^2 - (11.89)^2 + 59.98 \% \text{ of } 599$

- (a) 30
- (b) 25
- (c) 28
- (d) 22
- (e) 19

Q58. $42.03 \times 15.89 - \sqrt{2303.98} = (?)^2 - 0.99$

- (a) 27
- (b) 22
- (c) 24
- (d) 23
- (e) 25

Q59. $\frac{455.93}{?} = 12.98 \times 1.99^5 - 44.99\% \text{ of } 840.1$

- (a) 15
- (b) 9
- (c) 18
- (d) 21
- (e) 12

Q60. $\sqrt{821.01} - \sqrt{1368.97} = \sqrt{?} + \sqrt{575}$

- (a) 25
- (b) 36
- (c) 49
- (d) 16
- (e) 9

Q61. $7.99^3 \times 2.99^4 \div 11.98^2 + ?^2 = 17.03^2$

- (a) 14
- (b) 19
- (c) 1
- (d) 8
- (e) 4

Q62. Veer, Aayush and Shivam entered into a business and invested in the ratio of a : 12 : 15 respectively. If time period for which Veer, Aayush and Shivam invested is in the ratio of 12: 10 : b respectively and the profit share of Veer, Aayush and Shivam are same, then find 'a-b'?

- (a) 4
- (b) 3
- (c) 5
- (d) 2
- (e) None of these

Q63. Average of four numbers is increased by 1 when a number is replaced by x and average of that four number is decreased by 1 when another number is replaced with x . What is the difference of the both numbers?

- (a) 6
- (b) 8
- (c) 16
- (d) 4
- (e) Cannot be determined

Q64. There are three numbers and the ratio of first to second number is 9:10, while the ratio of first to third number is 3:4. If average of all the three numbers is 62, then find difference of second and third number?

- (a) 8
- (b) 10
- (c) 12
- (d) 14
- (e) 16

Q65. 400 students took the All-India mock test, 60% of the boys and 80% of the girls cleared the cut off in this mock test. If the total percentage of students cleared the cut off of this mock test is 65%, then find how many girls appeared in this mock test?

- (a) 100
- (b) 120
- (c) 150
- (d) 300
- (e) 125

Directions (66-70): Read the given information carefully and answer the following questions.

Aayush has two daughters (Sneha and Neha) and two sons (Vivek and Vikash). Present age of Aayush is equal to the sum of present age of both the sons and 125% of the sum of present age of both the daughters. Vikash was 20 years elder to Sneha who was that time 16 years younger to her sister. 10 years ago, ratio of age of Aayush to that of Vivek at that time was 3:1.

Q66. Find the ratio of age of Neha four years later to that of age of Vivek ten years later?

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

Q67. Find the average of present age of all the five members?

- (a) 39.6 years
- (b) 39.4 years
- (c) 38.8 years
- (d) 38.4 years
- (e) 39.2 years

Q68. Find the difference between sum of present age of Vivek and Vikash together and the sum of present age of Sneha and Neha together?

- (a) 14 years
- (b) 21 years
- (c) 18 years
- (d) 20 years
- (e) 12 years

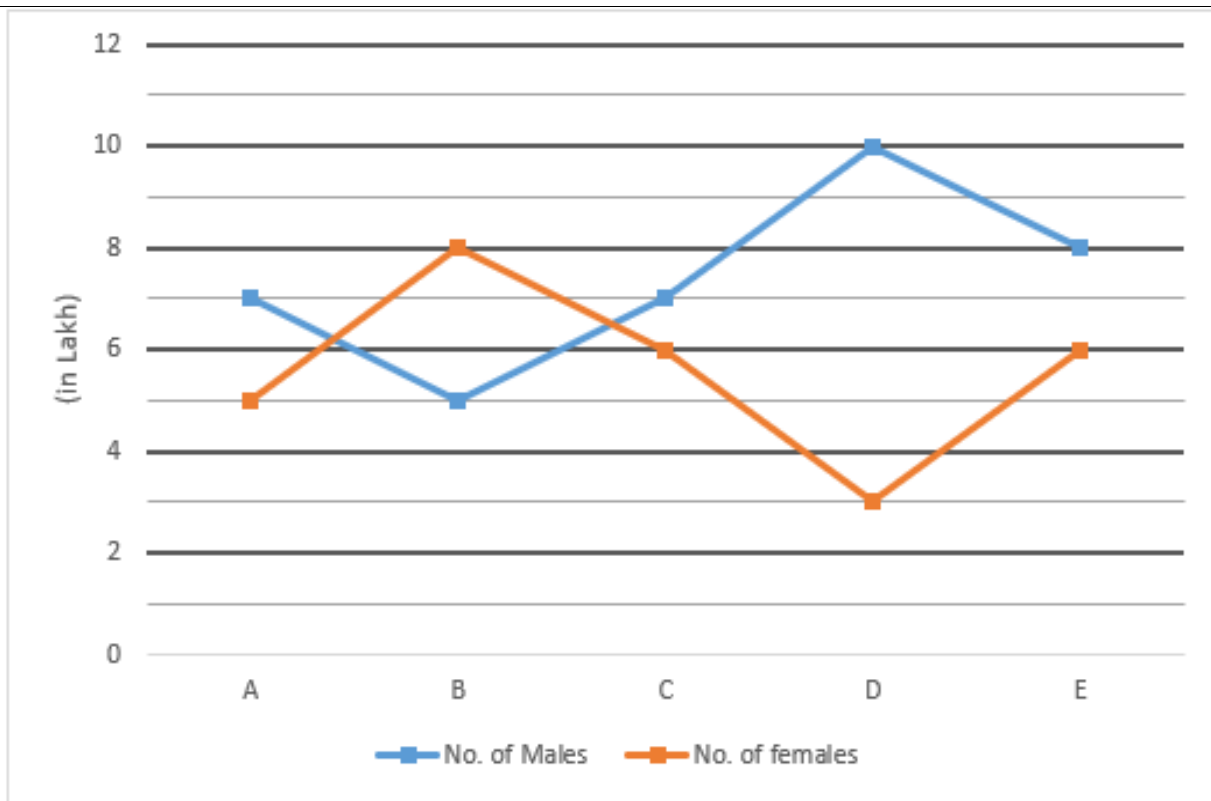
Q69. Difference between the age of the eldest child and that of the youngest child is what percent of the present age of Neha?

- (a) $44\frac{4}{9}\%$
- (b) $55\frac{5}{9}\%$
- (c) $57\frac{1}{2}\%$
- (d) $66\frac{2}{3}\%$
- (e) 60%

Q70. If ratio of age of Aayush's wife four years ago to that of her eldest child four years ago was 5: 3 then find the difference between age of Aayush and that of his wife 15 years hence?

- (a) 4 years
- (b) 10 years
- (c) 5 years
- (d) 6 years
- (e) 8 years

Directions (71-75):- The line graph given below shows the number of males and females in five cities A,B,C,D and E. Read the graph & find the solution of the given questions.



Q71. Which city has the minimum population among the five cities?

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

Q72. If no. of males in city A & B increase by 10% & 20% respectively then what will be the difference in total population of A & B.

- (a) 1 lakh
- (b) 1.1 lakh
- (c) 1.2 lakh
- (d) 1.3 lakh
- (e) 1.4 lakh

Q73. Find the ratio of the average no. of males in B, C, D to average no. females in C, D, E ?

- (a) 15 : 23
- (b) 15 : 22
- (c) 22 : 15
- (d) 23 : 15
- (e) None of these

Q74. What is % of females (approximate) in total population?

- (a) 35%
- (b) 43%
- (c) 50%
- (d) 30%
- (e) 55%

Q75. If the population of D & B increases by 10% & 15% respectively then what will be the ratio of no. of males in D to no. of females in B?

- (a) 7 : 13
- (b) 2 : 1
- (c) 1 : 2
- (d) Can't be determined
- (e) None of these

Directions (76-80): In each of these questions, two equations (I) and (II) are given. Solve the equations and mark the correct option:

Q76.

I: $2x^2 + 10x + 12 = 0$

II: $y^2 + 10x + 25 = 0$

- (a) $x > y$
- (b) $x \geq y$
- (c) $x < y$
- (d) $x \leq y$
- (e) $x = y$ or relation can't be established.

Q77.

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

II. $y^2 - 7y + 6 = 0$

- (a) $x \leq y$
- (b) $x \geq y$
- (c) $x < y$
- (d) $x > y$
- (e) $x = y$ or relation can't be established.

Q78.

I. $x^2 = 625$

II. $y = \sqrt{625}$

- (a) $x > y$
- (b) $x \geq y$
- (c) $x < y$
- (d) $x \leq y$
- (e) $x = y$ or relation can't be established.

Q79.

I. $x^2 + 23x + 130 = 0$

II. $y^2 + 30y + 224 = 0$

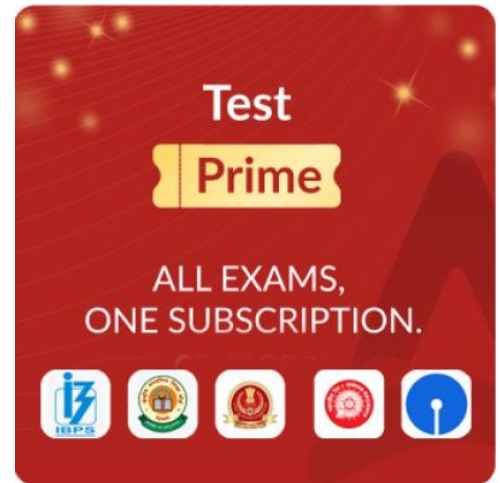
- (a) $x = y$ or relation can't be established.
- (b) $x \geq y$
- (c) $x < y$
- (d) $x \leq y$
- (e) $x > y$

Q80.

I. $x^2 + 21x + 108 = 0$

II. $y^2 + 24y + 143 = 0$

- (a) $x = y$ or relation can't be established.
- (b) $x \geq y$
- (c) $x < y$
- (d) $x \leq y$
- (e) $x > y$



Test Prime

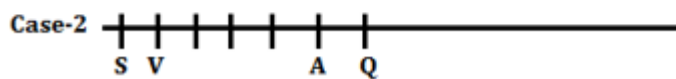
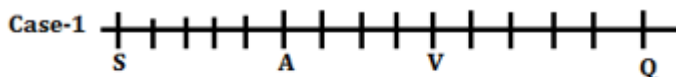
ALL EXAMS, ONE SUBSCRIPTION.

Logos for various exams: IBPS, UPSC, SSC, Railway, and others.

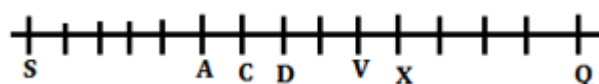
Solutions

S1. Ans.(b)

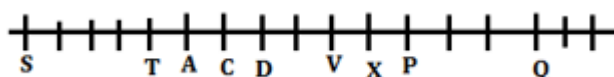
Sol. From the given statements, Q sits fifth to the right of V. Three person sit between V and A. S sits fifth to the left of A. We get 2 possible cases – Case 1 and Case 2.



Only one person sits between V and D. X sits third to the right of D. S is not the immediate neighbor of D. So, from this condition case-2 is eliminated.

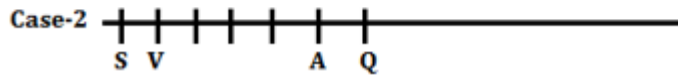
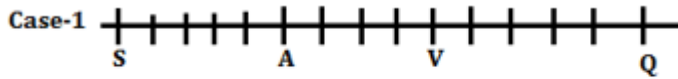


Only three persons sit between X and C. Q is third from the right end. Only six persons sit between P and T. P is an immediate neighbour of X. So, the final arrangement is-

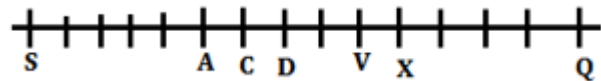


S2. Ans.(a)

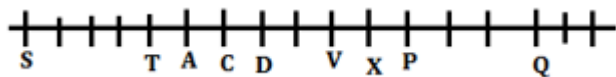
Sol. From the given statements, Q sits fifth to the right of V. Three person sit between V and A. S sits fifth to the left of A. We get 2 possible cases – Case 1 and Case 2.



Only one person sits between V and D. X sits third to the right of D. S is not the immediate neighbor of D. So, from this condition case-2 is eliminated.

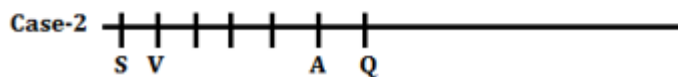
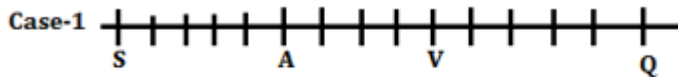


Only three persons sit between X and C. Q is third from the right end. Only six persons sit between P and T. P is an immediate neighbour of X. So, the final arrangement is-

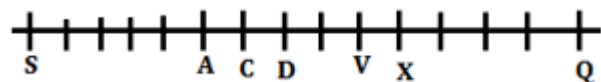


S3. Ans.(c)

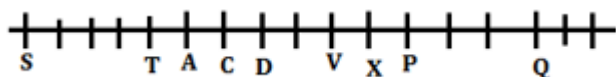
Sol. From the given statements, Q sits fifth to the right of V. Three person sit between V and A. S sits fifth to the left of A. We get 2 possible cases – Case 1 and Case 2.



Only one person sits between V and D. X sits third to the right of D. S is not the immediate neighbor of D. So, from this condition case-2 is eliminated.

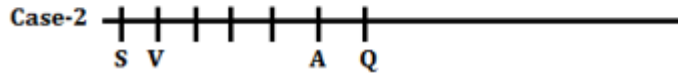
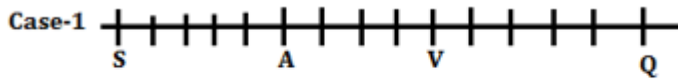


Only three persons sit between X and C. Q is third from the right end. Only six persons sit between P and T. P is an immediate neighbour of X. So, the final arrangement is-

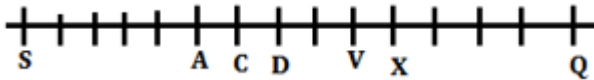


S4. Ans.(d)

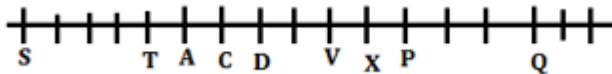
Sol. From the given statements, Q sits fifth to the right of V. Three person sit between V and A. S sits fifth to the left of A. We get 2 possible cases – Case 1 and Case 2.



Only one person sits between V and D. X sits third to the right of D. S is not the immediate neighbor of D. So, from this condition case-2 is eliminated.

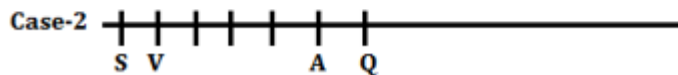
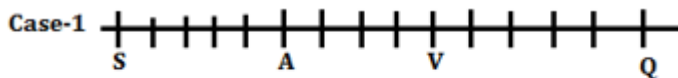


Only three persons sit between X and C. Q is third from the right end. Only six persons sit between P and T. P is an immediate neighbour of X. So, the final arrangement is-

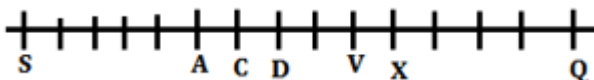


S5. Ans.(d)

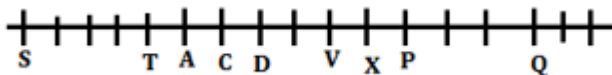
Sol. From the given statements, Q sits fifth to the right of V. Three person sit between V and A. S sits fifth to the left of A. We get 2 possible cases – Case 1 and Case 2.



Only one person sits between V and D. X sits third to the right of D. S is not the immediate neighbor of D. So, from this condition case-2 is eliminated.



Only three persons sit between X and C. Q is third from the right end. Only six persons sit between P and T. P is an immediate neighbour of X. So, the final arrangement is-



S6. Ans.(c)

Sol. I. $E > A$ (False) II. $A \geq F$ (False)

S7. Ans.(d)

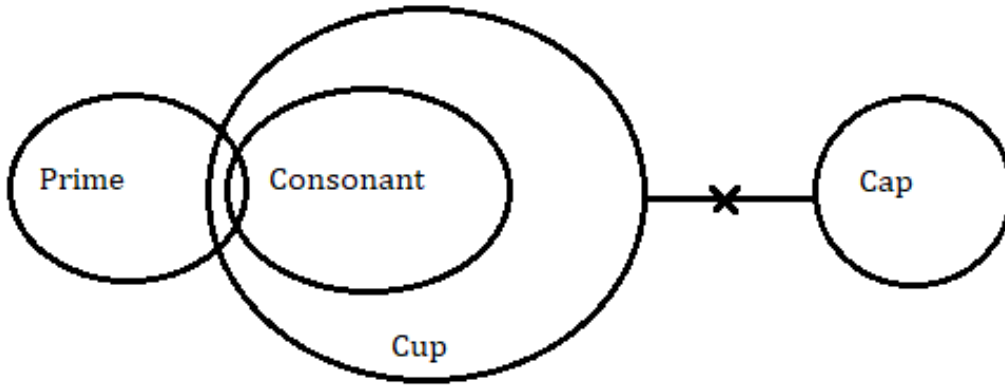
Sol. I. $B < Y$ (True) II. $Y > A$ (True)

S8. Ans.(c)

Sol. I. $T > Z$ (False) II. $Z = T$ (False)

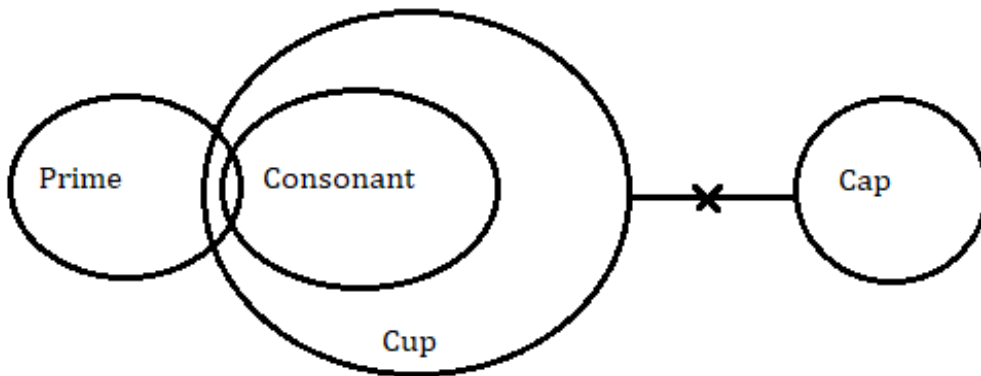
S9. Ans.(b)

Sol.



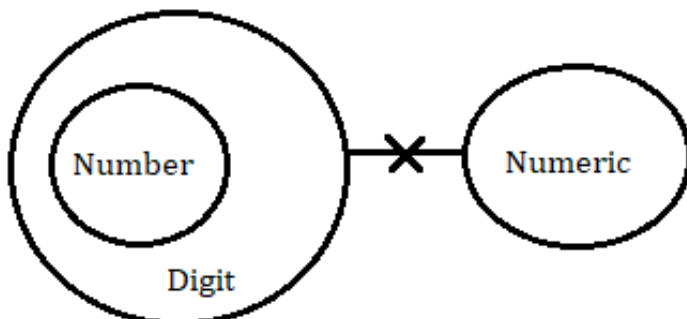
S10. Ans.(e)

Sol.



S11. Ans.(e)

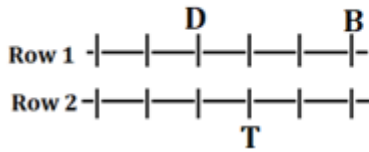
Sol.



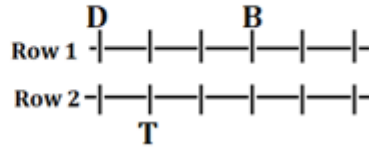
S12. Ans.(c)

Sol. D sits third to the right of B. Either D or B sits at an extreme end of the line. There are two possibilities. The one who faces B sits second to right of T.

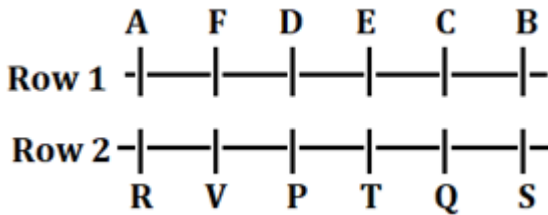
Case-1



Case-2



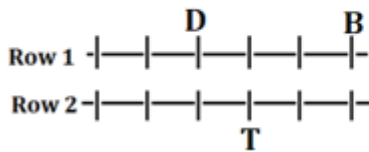
Two people sit between Q and V. Neither Q nor V sits at an extreme end of the line. From these conditions case-2 will be eliminated. The immediate neighbour of Q faces the person who sits third to left of A. R sits second to the left of P. C and E are immediate neighbours of each other. E does not face the immediate neighbour of S. The final arrangement is-



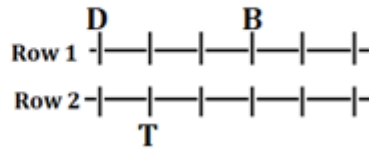
S13. Ans.(b)

Sol. D sits third to the right of B. Either D or B sits at an extreme end of the line. There are two possibilities. The one who faces B sits second to right of T.

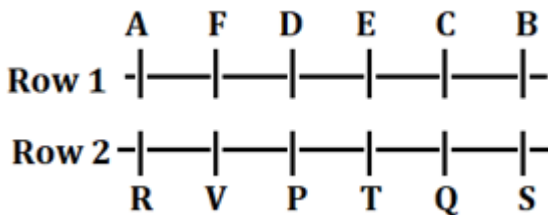
Case-1



Case-2



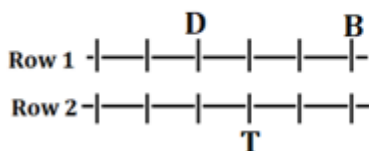
Two people sit between Q and V. Neither Q nor V sits at an extreme end of the line. From these conditions case-2 will be eliminated. The immediate neighbour of Q faces the person who sits third to left of A. R sits second to the left of P. C and E are immediate neighbours of each other. E does not face the immediate neighbour of S. The final arrangement is-



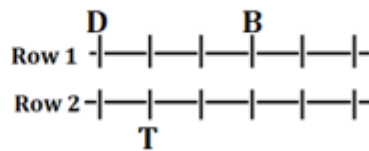
S14. Ans.(d)

Sol. D sits third to the right of B. Either D or B sits at an extreme end of the line. There are two possibilities. The one who faces B sits second to right of T.

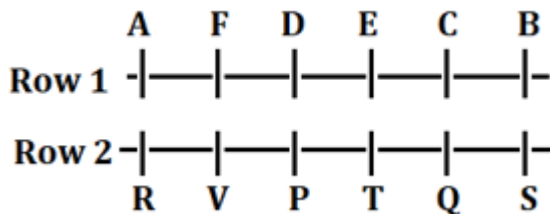
Case-1



Case-2

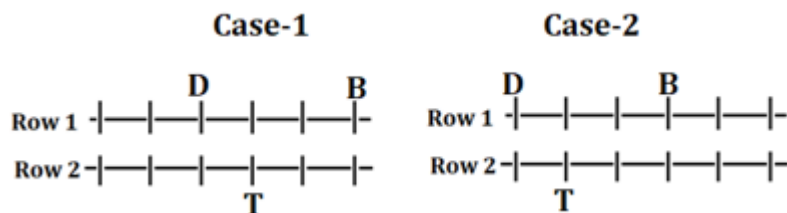


Two people sit between Q and V. Neither Q nor V sits at an extreme end of the line. From these conditions case-2 will be eliminated. The immediate neighbour of Q faces the person who sits third to left of A. R sits second to the left of P. C and E are immediate neighbours of each other. E does not face the immediate neighbour of S. The final arrangement is-

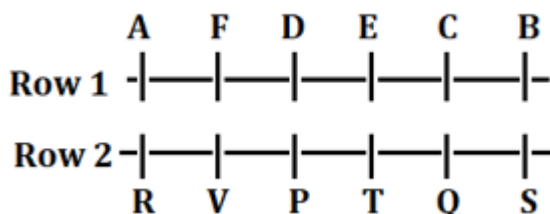


S15. Ans.(c)

Sol. D sits third to the right of B. Either D or B sits at an extreme end of the line. There are two possibilities. The one who faces B sits second to right of T.

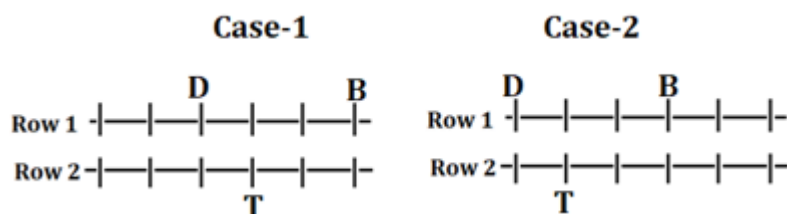


Two people sit between Q and V. Neither Q nor V sits at an extreme end of the line. From these conditions case-2 will be eliminated. The immediate neighbour of Q faces the person who sits third to left of A. R sits second to the left of P. C and E are immediate neighbours of each other. E does not face the immediate neighbour of S. The final arrangement is-

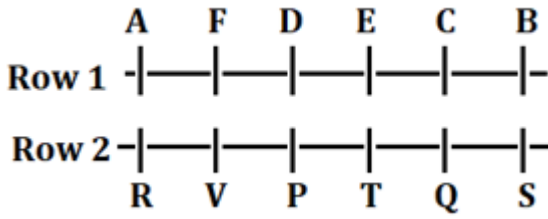


S16. Ans.(d)

Sol. D sits third to the right of B. Either D or B sits at an extreme end of the line. There are two possibilities. The one who faces B sits second to right of T.

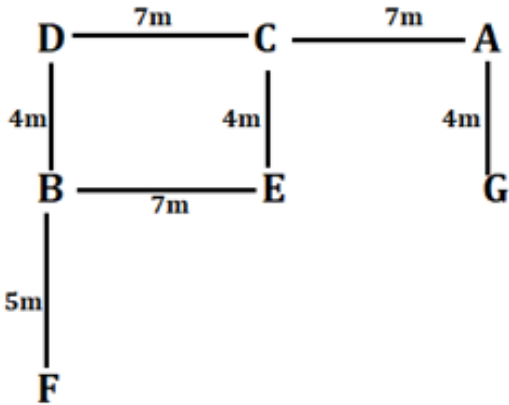


Two people sit between Q and V. Neither Q nor V sits at an extreme end of the line. From these conditions case-2 will be eliminated. The immediate neighbour of Q faces the person who sits third to left of A. R sits second to the left of P. C and E are immediate neighbours of each other. E does not face the immediate neighbour of S. The final arrangement is-



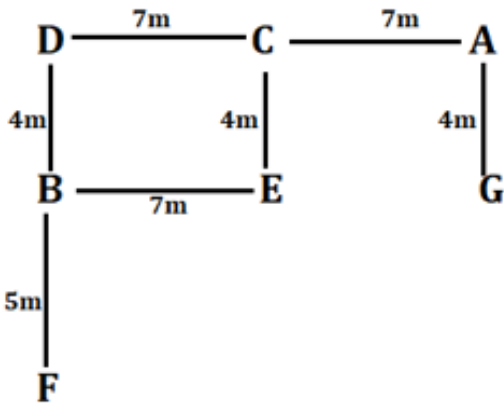
S17. Ans.(d)

Sol.



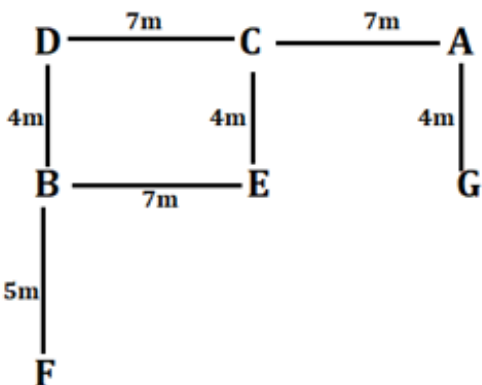
S18. Ans.(a)

Sol.








S19. Ans.(c)

Sol.



Test
Prime

ALL EXAMS,
ONE SUBSCRIPTION.

S20. Ans.(a)

Sol.

Given Word- MULTINATIONAL

After arrangement- AAHILLMNNOTTU

S21. Ans.(d)

S22. Ans.(b)

Sol. R has exam on an odd date. Six persons give exams between R and F. R does not give his exam in February. Three persons give exams between H and F. No one gives exam after M. There are three possible cases.

Date Month	Case-1		Case-2		Case-3	
	16	27	16	27	16	27
January		R	F			
February					F	
April	H		H			
May				R	H	
October	F					R
November		M		M		M

S and N have exams in the same month but not in the month which has 30 days. S and R have exams on different dates. N does not give exam after H. G gives exam immediately after W and in the month which has 30 days. Only four persons give exam between G and P who has exam after R. From this condition case-2 will be eliminated. T has exam before V and both give exams on the same date. U and R has exam on different dates. From this condition case-1 will be eliminated and the final arrangement is

Date Month	16th	27th
January	S	N
February	F	T
April	W	G
May	H	V
October	U	R
November	P	M

S23. Ans.(e)

Sol. R has exam on an odd date. Six persons give exams between R and F. R does not give his exam in February. Three persons give exams between H and F. No one gives exam after M. There are three possible cases.

Date Month	Case-1		Case-2		Case-3	
	16	27	16	27	16	27
January		R	F			
February					F	
April	H		H			
May				R	H	
October	F					R
November		M		M		M

S and N have exams in the same month but not in the month which has 30 days. S and R have exams on different dates. N does not give exam after H. G gives exam immediately after W and in the month which has 30 days. Only four persons give exam between G and P who has exam after R. From this condition case-2 will be eliminated. T has exam before V and both give exams on the same date. U and R has exam on different dates. From this condition case-1 will be eliminated and the final arrangement is

Date Month	16th	27th
January	S	N
February	F	T
April	W	G
May	H	V
October	U	R
November	P	M

S24. Ans.(e)

Sol. R has exam on an odd date. Six persons give exams between R and F. R does not give his exam in February. Three persons give exams between H and F. No one gives exam after M. There are three possible cases.

Date Month	Case-1		Case-2		Case-3	
	16	27	16	27	16	27
January		R	F			
February					F	
April	H		H			
May				R	H	
October	F					R
November		M		M		M

S and N have exams in the same month but not in the month which has 30 days. S and R have exams on different dates. N does not give exam after H. G gives exam immediately after W and in the month which has 30 days. Only four persons give exam between G and P who has exam after R. From this condition case-2 will be eliminated. T has exam before V and both give exams on the same date. U and R has exam on different dates. From this condition case-1 will be eliminated and the final arrangement is

Date	16th	27th
January	S	N
February	F	T
April	W	G
May	H	V
October	U	R
November	P	M

S25. Ans.(d)

Sol. R has exam on an odd date. Six persons give exams between R and F. R does not give his exam in February. Three persons give exams between H and F. No one gives exam after M. There are three possible cases.

Date	Case-1		Case-2		Case-3	
	16	27	16	27	16	27
January		R	F			
February					F	
April	H		H			
May				R	H	
October	F					R
November		M		M		M

S and N have exams in the same month but not in the month which has 30 days. S and R have exams on different dates. N does not give exam after H. G gives exam immediately after W and in the month which has 30 days. Only four persons give exam between G and P who has exam after R. From this condition case-2 will be eliminated. T has exam before V and both give exams on the same date. U and R has exam on different dates. From this condition case-1 will be eliminated and the final arrangement is

Date	16th	27th
January	S	N
February	F	T
April	W	G
May	H	V
October	U	R
November	P	M

S26. Ans.(a)

Sol. R has exam on an odd date. Six persons give exams between R and F. R does not give his exam in February. Three persons give exams between H and F. No one gives exam after M. There are three possible cases.

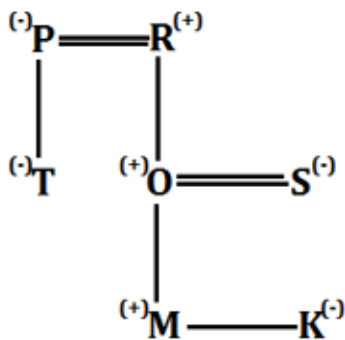
Date Month	Case-1		Case-2		Case-3	
	16	27	16	27	16	27
January		R	F			
February					F	
April	H		H			
May				R	H	
October	F					R
November		M		M		M

S and N have exams in the same month but not in the month which has 30 days. S and R have exams on different dates. N does not give exam after H. G gives exam immediately after W and in the month which has 30 days. Only four persons give exam between G and P who has exam after R. From this condition case-2 will be eliminated. T has exam before V and both give exams on the same date. U and R has exam on different dates. From this condition case-1 will be eliminated and the final arrangement is

Date Month	16th	27th
January	S	N
February	F	T
April	W	G
May	H	V
October	U	R
November	P	M

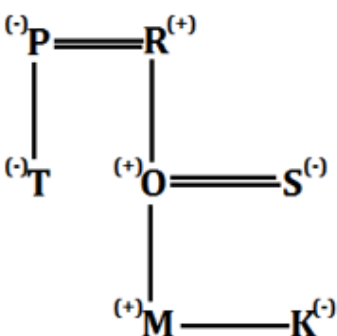
S27. Ans.(b)

Sol.



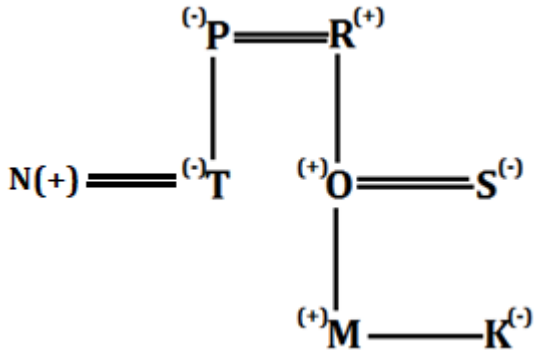
S28. Ans.(c)

Sol.



S29. Ans.(c)

Sol.



S30. Ans.(d)

Sol. Four persons live between A and C who lives on an even numbered floor. There are three possible cases. Two persons live between A and B.

	Case-1	Case-2	Case-3
Floor	Persons	Persons	Persons
8	C		
7			A
6	B	C	
5			
4		B	B
3	A		
2			C
1		A	

Three persons live between E and D who lives on an odd numbered floor above B's floor. From this condition case-1 will be eliminated. More than four persons live between F and G who lives above F's floor. From this condition case-3 will be eliminated. H lives on an odd numbered floor. The final arrangement is-

Floor	Persons
8	G
7	D
6	C
5	H
4	B
3	E
2	F
1	A

S31. Ans.(b)

Sol. Four persons live between A and C who lives on an even numbered floor. There are three possible cases. Two persons live between A and B.

	Case-1	Case-2	Case-3
Floor	Persons	Persons	Persons
8	C		
7			A
6	B	C	
5			
4		B	B
3	A		
2			C
1		A	

Three persons live between E and D who lives on an odd numbered floor above B's floor. From this condition case-1 will be eliminated. More than four persons live between F and G who lives above F's floor. From this condition case-3 will be eliminated. H lives on an odd numbered floor. The final arrangement is-

Floor	Persons
8	G
7	D
6	C
5	H
4	B
3	E
2	F
1	A

S32. Ans.(c)

Sol. Four persons live between A and C who lives on an even numbered floor. There are three possible cases. Two persons live between A and B.

	Case-1	Case-2	Case-3
Floor	Persons	Persons	Persons
8	C		
7			A
6	B	C	
5			
4		B	B
3	A		
2			C
1		A	

Three persons live between E and D who lives on an odd numbered floor above B's floor. From this condition case-1 will be eliminated. More than four persons live between F and G who lives above F's floor. From this condition case-3 will be eliminated. H lives on an odd numbered floor. The final arrangement is-

Floor	Persons
8	G
7	D
6	C
5	H
4	B
3	E
2	F
1	A

S33. Ans.(a)

Sol. Four persons live between A and C who lives on an even numbered floor. There are three possible cases. Two persons live between A and B.

	Case-1	Case-2	Case-3
Floor	Persons	Persons	Persons
8	C		
7			A
6	B	C	
5			
4		B	B
3	A		
2			C
1		A	

Three persons live between E and D who lives on an odd numbered floor above B's floor. From this condition case-1 will be eliminated. More than four persons live between F and G who lives above F's floor. From this condition case-3 will be eliminated. H lives on an odd numbered floor. The final arrangement is-

Floor	Persons
8	G
7	D
6	C
5	H
4	B
3	E
2	F
1	A

S34. Ans.(e)

Sol. Four persons live between A and C who lives on an even numbered floor. There are three possible cases. Two persons live between A and B.

	Case-1	Case-2	Case-3
Floor	Persons	Persons	Persons
8	C		
7			A
6	B	C	
5			
4		B	B
3	A		
2			C
1		A	

Three persons live between E and D who lives on an odd numbered floor above B's floor. From this condition case-1 will be eliminated. More than four persons live between F and G who lives above F's floor. From this condition case-3 will be eliminated. H lives on an odd numbered floor. The final arrangement is-

Floor	Persons
8	G
7	D
6	C
5	H
4	B
3	E
2	F
1	A

S35. Ans.(b)

Sol. L is doing M.Sc. H is doing M.A. and studying in JNU with only J. G is doing M.Sc. and studying in DU with M who is doing M.A. J is doing M.Sc. K is not doing M.Com. It's mean that K is doing MA. From these conditions' arrangement will be-

Student	University	Degree
E		
F		
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K		M.A.
L		M.Sc.
M	DU	M.A.

E and F are not studying in DU and doing the same degree but not M.A. So, E and F are studying in BHU and doing M.Com. L and G are not studying in the same university. So, L is studying in BHU. So final arrangement will be-

Student	University	Degree
E	BHU	M.Com
F	BHU	M.Com
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K	DU	M.A.
L	BHU	M.Sc.
M	DU	M.A.

S36. Ans.(c)

Sol. L is doing M.Sc. H is doing M.A. and studying in JNU with only J. G is doing M.Sc. and studying in DU with M who is doing M.A. J is doing M.Sc. K is not doing M.Com. It's mean that K is doing MA. From these conditions' arrangement will be-

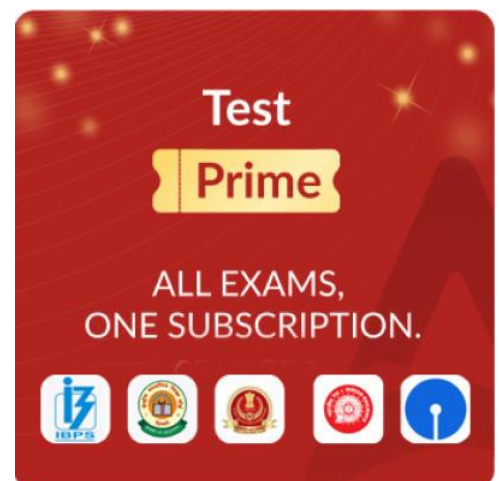
Student	University	Degree
E		
F		
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K		M.A.
L		M.Sc.
M	DU	M.A.

E and F are not studying in DU and doing the same degree but not M.A. So, E and F are studying in BHU and doing M.Com. L and G are not studying in the same university. So, L is studying in BHU. So final arrangement will be-

Student	University	Degree
E	BHU	M.Com
F	BHU	M.Com
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K	DU	M.A.
L	BHU	M.Sc.
M	DU	M.A.


S37. Ans.(d)

Sol. L is doing M.Sc. H is doing M.A. and studying in JNU with only J. G is doing M.Sc. and studying in DU with M who is doing M.A. J is doing M.Sc. K is not doing M.Com. It's mean that K is doing MA. From these conditions' arrangement will be-



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ALL EXAMS,
ONE SUBSCRIPTION.



Student	University	Degree
E		
F		
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K		M.A.
L		M.Sc.
M	DU	M.A.

E and F are not studying in DU and doing the same degree but not M.A. So, E and F are studying in BHU and doing M.Com. L and G are not studying in the same university. So, L is studying in BHU. So final arrangement will be-

Student	University	Degree
E	BHU	M.Com
F	BHU	M.Com
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K	DU	M.A.
L	BHU	M.Sc.
M	DU	M.A.

S38. Ans.(c)

Sol. L is doing M.Sc. H is doing M.A. and studying in JNU with only J. G is doing M.Sc. and studying in DU with M who is doing M.A. J is doing M.Sc. K is not doing M.Com. It's mean that K is doing MA. From these conditions' arrangement will be-

Student	University	Degree
E		
F		
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K		M.A.
L		M.Sc.
M	DU	M.A.

E and F are not studying in DU and doing the same degree but not M.A. So, E and F are studying in BHU and doing M.Com. L and G are not studying in the same university. So, L is studying in BHU. So final arrangement will be-

Student	University	Degree
E	BHU	M.Com
F	BHU	M.Com
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K	DU	M.A.
L	BHU	M.Sc.
M	DU	M.A.

S39. Ans.(b)

Sol. L is doing M.Sc. H is doing M.A. and studying in JNU with only J. G is doing M.Sc. and studying in DU with M who is doing M.A. J is doing M.Sc. K is not doing M.Com. It's mean that K is doing MA. From these conditions' arrangement will be-

Student	University	Degree
E		
F		
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K		M.A.
L		M.Sc.
M	DU	M.A.

E and F are not studying in DU and doing the same degree but not M.A. So, E and F are studying in BHU and doing M.Com. L and G are not studying in the same university. So, L is studying in BHU. So final arrangement will be-

Student	University	Degree
E	BHU	M.Com
F	BHU	M.Com
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K	DU	M.A.
L	BHU	M.Sc.
M	DU	M.A.

S40. Ans.(d)

Sol. $C > D > A > B > E$

S41. Ans.(a)

Sol.

$$\text{Total number of mobiles sold by store P} = (400 + 300) \times \frac{20}{100} = 140$$

$$\text{Total number of 'Android mobiles' sold by store P} = 400 \times \frac{30}{100} = 120$$

$$\text{So, total 'IOS mobiles' sold by store P} = 140 - 120 = 20$$

$$\text{Total number of mobiles sold by store Q} = (600 + 400) \times \frac{40}{100} = 400$$

$$\text{Total number of 'Android mobiles' sold by store Q} = 600 \times \frac{40}{100} = 240$$

$$\text{So, total 'IOS mobiles' sold by store Q} = 400 - 240 = 160$$

$$\text{Required sum} = 20 + 160 = 180$$

S42. Ans.(e)

Sol.

$$\begin{aligned} \text{Total number of mobiles sold by store Q and store R together} &= (600 + 400) \times \frac{40}{100} + (500 + 400) \times \frac{30}{100} \\ &= 400 + 270 = 670 \end{aligned}$$

$$\text{Total unsold mobiles by store P} = (400 + 300) \times \frac{80}{100} = 560$$

$$\text{Required number} = 560 - \frac{670}{2} = 225$$

S43. Ans.(d)

Sol.

$$\text{Total 'Android mobiles' sold by store R} = (500 + 400) \times \frac{30}{100} \times \frac{5}{9} = 150$$

$$\text{Total 'Android mobiles' sold by store Q} = (600 + 400) \times \frac{40}{100} \times \frac{3}{5} = 240$$

$$\text{Required sum} = 150 + 240 = 390$$

S44. Ans.(e)

Sol.

$$\text{Total unsold mobiles of store P} = (400 + 300) \times \frac{80}{100} = 560$$

$$\begin{aligned} \text{Total unsold mobiles of store Q \& R} &= (600 + 400) \times \frac{60}{100} + (500 + 400) \times \frac{70}{100} \\ &= 600 + 630 = 1230 \end{aligned}$$

$$\text{Required percentage} = \frac{560}{1230} \times 100 = 45.52 \approx 45\%$$

S45. Ans.(c)

Sol.

$$\begin{aligned} \text{Total number of mobiles sold by all three stores P, Q \& R} &= (400 + 300) \times \frac{20}{100} + \\ & (600 + 400) \times \frac{40}{100} + (500 + 400) \times \frac{30}{100} \\ &= 140 + 400 + 270 \\ &= 810 \end{aligned}$$

S46. Ans.(b)

Sol.

$$\begin{aligned} \text{Remaining quantity of milk after third replacement} &= \text{initial quantity} \left(1 - \frac{\text{withdrawl quantity}}{\text{initial quantity}}\right)^3 \\ &= 250 \left(1 - \frac{25}{250}\right)^3 \\ &= 250 \times (1 - 0.1)^3 \\ &= 182.25 \text{ l} \end{aligned}$$

$$\text{Volume of milk after third replacement} = 182.25 \text{ l}$$

S47. Ans.(d)

Sol.

Let radius of smaller sphere be r cm

ATQ –

$$\frac{\frac{4}{3}\pi \times r \times r \times r}{\frac{4}{3}\pi \times 14 \times 14 \times 14} = \frac{27}{64}$$

$$\Rightarrow r^3 = \frac{27}{64} \times 14 \times 14 \times 14$$

$$\Rightarrow r = \frac{3}{4} \times 14$$

$$\Rightarrow r = 10.5 \text{ cm}$$

$$\text{Side of square} = 10.5 + 7.5 = 18 \text{ cm}$$

$$\text{Area of square} = 18 \times 18 = 324 \text{ cm}^2$$

S48. Ans.(a)

Sol.

Let present age of Adarsh & Sameer is $13x$ & $15x$ respectively

Present age of Ayush = $(13x - 2)$

ATQ –

$$\frac{(13x - 2) + 3}{15x + 3} = \frac{9}{11}$$

$$143x - 135x = 27 - 11$$

$$x = 2 \text{ years}$$

$$\text{Required difference} = (13 \times 2 + 5) - 15 \times 2 = 1 \text{ year}$$

S49. Ans.(d)

Sol.

$$\text{Required probability} = \frac{{}^2C_1}{{}^{52}C_1} \times \frac{{}^2C_1}{{}^{51}C_1}$$

$$= \frac{2}{{}^{52}C_1} \times \frac{2}{{}^{51}C_1}$$

$$= \frac{1}{13 \times 51} = \frac{1}{663}$$

S50. Ans.(a)

Sol.

Let market price = $10x$

$$\text{Then selling price will be} = 10x \times \frac{90}{100}$$

$$= 9x$$

$$\text{Cost price will be} = \frac{9x \times 100}{108}$$

$$= \frac{25x}{3}$$

According to question market price will be of 4 article and cost price will be of 5 article.

$$\begin{aligned} \text{Required percentage} &= \frac{\frac{10x}{25x}}{\frac{4}{3 \times 5}} \times 100 \\ &= \frac{10x \times 3 \times 5}{25x \times 4} \times 100 \\ &= 150\% \end{aligned}$$

S51. Ans.(b)

Sol.

Let the upstream speed of boat be $5x$ km/hr

Then, downward speed of boat = $5x \times \frac{8}{5} = 8x$ km/hr

Speed of boat in still water = $6.5x$ km/hr

Speed of stream = $1.5x$ km/hr

ATQ

$$\begin{aligned} \frac{65}{5x} - \frac{65}{6.5x} &= 1.5 \\ x &= 2 \end{aligned}$$

Speed of stream = 3 km/hr

S52. Ans.(a)

Sol.

$$\text{Part invested at } 5\% = \frac{1800}{9} \times 4 = \text{Rs.}800$$

$$\text{Part invested at } x\% = \frac{1800}{9} \times 5 = \text{Rs.}1000$$

ATQ,

$$\begin{aligned} \frac{800 \times 5 \times 2}{100} + \frac{1000 \times x \times 2}{100} &= 160 \\ x &= 4\% \end{aligned}$$

S53. Ans.(a)

Sol.

$$\text{Speed of first train} = \frac{1.6}{3} \times 60 = 32 \text{ km/h}$$

Speed of second train = 50 km/h

Let length of second train = d km

ATQ

$$\Rightarrow (32 + 50) \times \frac{90}{41} \times \frac{1}{60} = d + 1.6$$

$$\Rightarrow 82 \times \frac{90}{41} \times \frac{1}{60} = d + 1.6$$

$$\Rightarrow d = 1.4 \text{ km}$$

S54. Ans.(c)

Sol.

Let Manoj's initial expenditure = x

Saving becomes = 5000 - x

ATQ,

Income = Expenditure + Saving

$$\Rightarrow 5000 \times \frac{110}{100} = x \times \frac{118}{100} + (5000 - x) \frac{98}{100}$$

$$\Rightarrow 550000 = 118x + 490000 - 98x$$

$$\Rightarrow x = 3000 \text{ Rs.}$$

S55. Ans.(a)

Sol.

$$\text{Weight of the new student} = 8 \times (26.5 + 2.5) - 7 \times 26.5 = 232 - 185.5 = 46.5 \text{ kg}$$

S56. Ans.(d)

Sol.

$$\frac{25}{100} \times 180 + (19)^2 = \frac{?}{100} \times 1015$$

$$45 + 361 = \frac{?}{100} \times 1015$$

$$406 \times \frac{100}{1015} = ?$$

$$? = 40$$

S57. Ans.(b)

Sol.

$$(29)^2 = (?)^2 - (12)^2 + \frac{60}{100} \times 600$$

$$841 = ?^2 - 144 + 360$$

$$?^2 = 625$$

$$? = 25$$

S58. Ans.(e)

Sol.

$$42 \times 16 - \sqrt{2304} = (?)^2 - 1$$

$$672 - 48 + 1 = (?)^2$$

$$625 = (?)^2$$

$$? = 25$$

S59. Ans.(e)

Sol.

$$\frac{456}{?} = 13 \times 32 - \frac{45}{100} \times 840$$

$$\frac{456}{?} = 416 - 378$$

$$\frac{456}{?} = 38$$

$$? = 12$$

S60. Ans.(d)

Sol.

$$\sqrt{821} - \sqrt{1369} = \sqrt{?} + \sqrt{576}$$

$$\sqrt{784} = \sqrt{?} + 24$$

$$? = 16$$

S61. Ans.(c)

Sol.

$$8^3 \times 3^4 \div 12^2 + (?)^2 = 17^2$$

$$\text{Or, } \frac{4^3 \times 2^3 \times 3^4}{4^2 \times 3^2} + (?)^2 = 289$$

$$\text{or, } 288 + (?)^2 = 289$$

$$\text{or, } (?)^2 = 1$$

$$(?)^2 = 1^2$$

$$\text{or, } ? = 1$$

S62. Ans.(d)

Sol.

Profit sharing ratio of Veer, Aayush and Shivam =

	Veer	:	Aayush	:	Shivam
Investment	a	:	12	:	15
Time	12	:	10	:	b

$$12a \quad : \quad 120 \quad : \quad 15b$$

Now given,

$$12a = 120$$

$$a = 10$$

$$\text{And, } 120 = 15b$$

$$b = 8$$

$$\text{so, } a - b = 10 - 8 = 2$$

S63. Ans.(b)

Sol.

Let four numbers $\rightarrow a, b, c, d$

Let initially 'a' was replaced

$$= \frac{x+b+c+d}{4} = \frac{a+b+c+d}{4} + 1 \dots(i)$$

Let then 'b' was replaced

$$= \frac{x+a+c+d}{4} + 1 = \frac{a+b+c+d}{4} \dots(ii)$$

Solving (i) and (ii)

$$b - a = 8$$

S64. Ans.(c)

Sol.

Let first and second number be $9x$ and $10x$ respectively

$$\text{Then third number} = \frac{9x}{3} \times 4 = 12x$$

ATQ

$$\frac{9x+10x+12x}{3} = 62$$

$$x = 6$$

$$\text{Required difference} = 2 \times 6 = 12$$

S65. Ans.(a)

Sol.

$$\text{Total number of students cleared the mock test} = \frac{400 \times 65}{100} = 260$$

Let number of girls = x

And number of boys = $(400 - x)$

$$\text{Now, cut off cleared by girls} = \frac{x \times 80}{100} = \frac{4x}{5}$$

And cut off cleared by boys

$$\frac{(400-x) \times 60}{100} = \frac{1200-3x}{5}$$

$$\text{Now, } \frac{4x}{5} + \frac{1200-3x}{5} = 260$$

$$\Rightarrow \frac{4x+1200-3x}{5} = 260$$

$$\Rightarrow x + 1200 = 1300$$

$$\Rightarrow x = 1300 - 1200 = 100$$

$$\therefore x = 100$$

Hence, one hundred girls appeared in the test.

S66. Ans.(c)

Sol.

Let the present age of Aayush be $5x$ years
 Sum of present age of Vivek and Vikash= $5x$ years
 And sum of present age of Sneha and Neha= $5x \times \frac{100}{125} = 4x$ years

Let the present age of Sneha be y years
 Then the present age of Vikash= $(y+20)$ years
 Present age of Neha= $(y+16)$ years

ATQ

$$y + 16 + y = 4x$$

$$y = 2x - 8 \dots \dots (i)$$

Present age of Vivek= $5x-(y+20) = (3x-12)$ years..... using (i)

And

$$\frac{5x-10}{3x-12-10} = \frac{3}{1}$$

$$x = 14$$

Present age of Aayush= 70 years

Present age of Sneha= 20 years

Present age of Neha= 36 years

Present age of Vivek= 30 years

Present age of Vikash= 40 years

$$\text{Required ratio} = \frac{36+4}{30+10} = \frac{40}{40} = 1 : 1$$



S67. Ans.(e)

Sol.

Let the present age of Aayush be $5x$ years
 Sum of present age of Vivek and Vikash= $5x$ years
 And sum of present age of Sneha and Neha= $5x \times \frac{100}{125} = 4x$ years

Let the present age of Sneha be y years
 Then the present age of Vikash= $(y+20)$ years
 Present age of Neha= $(y+16)$ years

ATQ

$$y + 16 + y = 4x$$

$$y = 2x - 8 \dots \dots (i)$$

Present age of Vivek= $5x-(y+20) = (3x-12)$ years..... using (i)

And

$$\frac{5x-10}{3x-12-10} = \frac{3}{1}$$

$$x = 14$$

Present age of Aayush= 70 years

Present age of Sneha= 20 years

Present age of Neha= 36 years

Present age of Vivek= 30 years

Present age of Vikash= 40 years

$$\text{Required average} = \frac{70+20+36+30+40}{5} = \frac{196}{5} = 39.2 \text{ years}$$



S68. Ans.(a)

Sol.

Let the present age of Aayush be $5x$ years

Sum of present age of Vivek and Vikash = $5x$ years

And sum of present age of Sneha and Neha = $5x \times \frac{100}{125} = 4x$ years

Let the present age of Sneha be y years

Then the present age of Vikash = $(y+20)$ years

Present age of Neha = $(y+16)$ years

ATQ

$$y + 16 + y = 4x$$

$$y = 2x - 8 \dots \dots (i)$$

Present age of Vivek = $5x - (y+20) = (3x-12)$ years..... using (i)

And

$$\frac{5x-10}{3x-12-10} = \frac{3}{1}$$

$$x = 14$$

Present age of Aayush = 70 years

Present age of Sneha = 20 years

Present age of Neha = 36 years

Present age of Vivek = 30 years

Present age of Vikash = 40 years

$$\text{Required difference} = (30 + 40) - (20 + 36) = 14 \text{ years}$$

S69. Ans.(b)

Sol.

Let the present age of Aayush be $5x$ years

Sum of present age of Vivek and Vikash = $5x$ years

And sum of present age of Sneha and Neha = $5x \times \frac{100}{125} = 4x$ years

Let the present age of Sneha be y years

Then the present age of Vikash = $(y+20)$ years

Present age of Neha = $(y+16)$ years

ATQ

$$y + 16 + y = 4x$$

$$y = 2x - 8 \dots \dots (i)$$

Present age of Vivek = $5x - (y+20) = (3x-12)$ years..... using (i)

And

$$\frac{5x-10}{3x-12-10} = \frac{3}{1}$$

$$x = 14$$

Present age of Aayush = 70 years

Present age of Sneha = 20 years

Present age of Neha = 36 years

Present age of Vivek = 30 years

Present age of Vikash = 40 years

$$\text{Difference} = 40 - 20 = 20 \text{ years}$$

$$\text{Required \%} = \frac{20}{36} \times 100 = \frac{500}{9} \% = 55 \frac{5}{9} \%$$

S70. Ans.(d)

Sol.

Let the present age of Aayush be $5x$ years

Sum of present age of Vivek and Vikash= $5x$ years

And sum of present age of Sneha and Neha= $5x \times \frac{100}{125} = 4x$ years

Let the present age of Sneha be y years

Then the present age of Vikash= $(y+20)$ years

Present age of Neha= $(y+16)$ years

ATQ

$$y + 16 + y = 4x$$

$$y = 2x - 8 \dots \dots (i)$$

Present age of Vivek= $5x-(y+20) = (3x-12)$ years..... using (i)

And

$$\frac{5x-10}{3x-12-10} = \frac{3}{1}$$

$$x = 14$$

Present age of Aayush= 70 years

Present age of Sneha= 20 years

Present age of Neha= 36 years

Present age of Vivek= 30 years

Present age of Vikash= 40 years

Let the present age of his wife be z years

ATQ,

$$\frac{z-4}{40-4} = \frac{5}{3} \Rightarrow z = 64 \text{ years}$$

Required difference = $(70 + 15) - (64 + 15) = 6$ years

S71. Ans.(e)

Sol.

Total population in A = 12 lakh

Total population in B = 13 lakh

Total population in C= 13 lakh

Total population in D = 13 lakh

Total population in E = 14 lakh

Lowest or min. Population is in A city

S72. Ans.(d)

Sol.

Total population in A [after increment] = $7 \text{ lakh} \times 1.1 + 5 \text{ lakh}$
 = 12.7 lakh

Total population in B [after increment] = $5 \text{ lakh} \times 1.2 + 8 \text{ lakh}$
 = 14 lakh

Req. difference = 1.3 lakh

S73. Ans.(c)

Sol.

$$\begin{aligned} \text{Average no. of males in B, C, D is} &= \frac{5 \text{ lakh} + 7 \text{ lakh} + 10 \text{ lakh}}{3} \\ &= \frac{22 \text{ lakh}}{3} \end{aligned}$$

$$\begin{aligned} \text{Average no. of females in C, D, E} &= \frac{6 \text{ lakh} + 3 \text{ lakh} + 6 \text{ lakh}}{3} \\ &= \frac{15 \text{ lakh}}{3} \end{aligned}$$

$$\text{Req. ratio} = \frac{22/3}{15/3} = \frac{22}{15}$$

S74. Ans.(b)

Sol.

Total no. of females

$$= (5 + 8 + 6 + 3 + 6) \text{ lakh}$$

$$= 28 \text{ lakh}$$

$$\text{Total population} = (12 + 13 + 13 + 13 + 14) \text{ lakh}$$

$$= 65 \text{ lakhs}$$

$$\% \text{ Of females} = \frac{28}{65} \times 100 \approx 43\%$$

S75. Ans.(d)

Sol. Increment is in the total population, since we don't know increment in population of male or female, so we can't find out the ratio.

S76. Ans.(a)

Sol.

$$\text{I. } 2x^2 + 10x + 12 = 0$$

$$2x^2 + 6x + 4x + 12 = 0$$

$$(2x + 4)(x + 3) = 0$$

$$x = -3, -2$$

$$\text{II. } y^2 + 10y + 25 = 0$$

$$y^2 + 5y + 5y + 25 = 0$$

$$(y + 5)(y + 5) = 0$$

$$y = -5$$

$$\therefore x > y$$

S77. Ans.(e)

Sol.

$$\text{I. } x^2 - 3x - 2x + 6 = 0$$

$$(x - 3)(x - 2) = 0$$

$$x = 3, 2$$

$$\text{I. } y^2 - 6y - y + 6 = 0$$

$$(y - 1)(y - 6) = 0$$

$$y = 1, 6$$

\therefore relation can't be established

S78. Ans.(d)

Sol.

I. $x = \pm 25$

II. $y = +25$

$\therefore x \leq y$

S79. Ans.(e)

Sol.

I. $x^2 + 23x + 130 = 0$

$x^2 + 13x + 10x + 130 = 0$

$x(x+13) + 10(x+13) = 0$

$(x+13)(x+10) = 0$

$x = -13, -10$

II. $y^2 + 30y + 224 = 0$

$y^2 + 16y + 14y + 224 = 0$

$y(y+16) + 14(y+16) = 0$

$(y+16)(y+14) = 0$

$y = -16, -14$

So, $x > y$

S80. Ans.(a)

Sol.

I. $x^2 + 21x + 108 = 0$

$x^2 + 9x + 12x + 108 = 0$

$x(x+9) + 12(x+9) = 0$

$(x+9)(x+12) = 0$

$x = -9, -12$

II. $y^2 + 24y + 143 = 0$

$y^2 + 11y + 13y + 143 = 0$

$y(y+11) + 13(y+11) = 0$

$(y+13)(y+11) = 0$

$y = -13, -11$

So, no relation



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