All India Mock for IBPS RRB Clerk Prelims (6th-7th May 2023)

Directions (1-5): Study the following alphanumeric series carefully and answer the questions given below.
K A G 6 V J S 8 Y O W P 4 W D R Q G 9 S J L A P Q V 2 D T W V K Q 4 O G 5 7 E C

Q1. How many letters are there which are immediately followed by a number and immediately preceded by a vowel?
(a) None
(b) One
(c) Two
(d) Three
(e) None of these

Q2. How many letters are there between the element which is 13th from the left end of the series and 10th element from the right end of the series?
(a) 16
(b) 17
(c) 19
(d) 15
(e) 20

Q3. Which of the following element is 8th to the right of 10th element from the left end of the series?
(a) G
(b) Q
(c) R
(d) 9
(e) S

Q4. How many numbers are there which are immediately followed and immediately preceded by a consonant?
(a) One
(b) Two
(c) Five
(d) Three
(e) Six

Q5. Which of the following element is 15th from the left end of the series?
(a) W
(b) D
(c) R
(d) Q
(e) 4

Directions (6-10): Study the following information carefully and answer the questions given below.
Eight boxes A, B, C, D, E, F, G and H are placed one above the other but not necessarily in the same order. Four boxes are placed between the box D and box E which is placed just above the box H. Two boxes are placed between the box H and box F. Box B is placed just below the box G and above box C. Number of boxes place above box D is same as placed below box C.

Q6. How many boxes are placed between box A and box E?
(a) None
(b) One
(c) Two
(d) Three
(e) Four

Q7. Which of the following box is placed just above box G?
(a) Box F
(b) Box A
(c) Box E
(d) Box D
(e) None of these

Q8. How many boxes are placed below box A?
(a) One
(b) Four
(c) Three
(d) Two
(e) None

Q9. If all the boxes are arranged according to alphabetical order from top to bottom, then how many boxes will remain at same position?
(a) None
(b) One
(c) Two
(d) Three
(e) None of these

Q10. If box D is related to box G in the same way box B is related to F, then which of the following box is related to C?
(a) Box E
(b) Box H
(c) Box A
(d) Box B
(e) None of these

Q11. How many pairs of letters are there in the word '**ASSIGNMENT**', each of which have as many letters between them in the word as they have in English alphabetical series (both forward and backward direction)?
(a) One
(b) Three
(c) None
(d) Two
(e) Four

Directions (12-15): In each of the questions below, some statements are given followed by two conclusions. 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.

Q12. Statements:
Only a few Zero are Hero.
No Hero is Actor.
Some Actors are Male.
Conclusions:
I. All Zero can be Hero.
II. Some Male are not Hero.
(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.

Q13. Statements:
Only A3 is C8.
Some A3 are J5.
All J5 are G2.
Conclusions:
I. Some G2 is A3.
II. No J5 is C8.

(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.

Q14. Statements:
Only Ocean are Water.
No Ocean is Sea.
Some Sea are Ponds.
Conclusions:
I. Some Ponds can be Water.
II. All Ponds can be Ocean.
(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.

Q15. Statements:
Some Quiz are Test.
Only a few Tests are Exam.
No Exam is Hard.
Conclusions:
I. Some Exam being Quiz is a possibility.
II. Some Quiz are Hard.
(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.

Q16. If in the number "**7326949784**," all the digits are arranged in ascending order from left to right, after that all the digits are changed to its just preceding digits, then what will be the sum of the number which is 4th from the left end and 4th from the right end of the number thus formed after rearrangement?
(a) 10
(b) 12
(c) 9
(d) 8
(e) 11

Directions (17-21): Study the following information carefully and answer the questions given below.
Five boys Rahul, Raj, Rohan, Robin, Rohit and three girls Reena, Riya, Ritu like three different mobile brands i.e., Apple, MI and Samsung but not necessarily in the same order. (Note: Each brand is liked by only one girl and not more than three persons like any of the brand).
Raj and Reena like same brand but not Samsung. Riya doesn't like Samsung. Rohit is the only boy who likes Samsung. Rohan and Robin like same brand but not Apple.

Q17. Who among the following likes Apple brand?
(a) Reena
(b) Rahul
(c) Ritu
(d) Both Reena and Rahul
(e) Both Rahul and Ritu

Q18. Which of the following statement(s) is/are true?
I. Ritu likes Samsung brand.
II. Rahul likes Apple brand.
III. Riya and Robin like same brand.
(a) Only statement I is true.
(b) Only statement II is true.
(c) Both statements I and II are true.
(d) Both Statements I and III are true.
(e) All statements are true.

Q19. Who among the following persons like same brand?
(a) Raj, Robin
(b) Riya, Rohan
(c) Rohit, Riya
(d) Rahul, Ritu
(e) None of these

Q20. Which of the following combination is true?
(a) Rahul- MI
(b) Rohan-Samsung
(c) Ritu-Apple
(d) Robin-MI
(e) None of these

Q21. Who among the following likes the same brand which is liked by Riya?
(a) Robin
(b) Rohan
(c) Rahul
(d) Both Robin and Rohan
(e) Both Rahul and Rohan

Directions (22-24): In each of the following questions assuming the given statements to be true, find which of the two conclusions I and II given below is/are definitely true and give your answer accordingly.

Q22.
Statements/कथन: $D > W < O = S; O = R > Z \leq M$

Conclusions/निष्कर्ष:
I. $W > Z$
II. $M \geq S$
(a) If only conclusion I is true.
(b) If only conclusion II is true.
(c) If either conclusion I or II is true.
(d) If neither conclusion I nor II is true.
(e) If both conclusions I and II are true.

Q23.
Statements/कथन: $O = W \geq S = G < T > K$

Conclusions/निष्कर्ष:
I. $O = G$
II. $G < O$
(a) If only conclusion I is true.
(b) If only conclusion II is true.
(c) If either conclusion I or II is true.
(d) If neither conclusion I nor II is true.
(e) If both conclusions I and II are true.

Q24.
Statements/कथन: $P > T < Y = U; Y > W < M = L$

Conclusions/निष्कर्ष:
I. $T \geq M$
II. $U > W$
(a) If only conclusion I is true.
(b) If only conclusion II is true.
(c)If either conclusion I or II is true.
(d) If neither conclusion I nor II is true.
(e) If both conclusions I and II are true.

Directions (25-29): Study the following information carefully and answer the questions given below.
Seven persons L, T, D, R, B, K and U sit in a row in such a way that all of them face north direction but not necessarily in the same order. Each of them likes seven different vegetables i.e. Onion, Potato, Tomato, Brinjal, Pea, Carrot and Pumpkin but not necessarily in the same order.
Four persons sit between B and the one who likes Onion. L sits immediate left of the one who likes Onion. Three persons sit between L and the one who likes Pumpkin. U likes Tomato and sits immediate left of the one who likes Carrot. B neither likes Pumpkin nor likes Carrot. The number of persons sit to the right of D is one less than the number of persons sit to the left of R. R doesn't like pumpkin. One person sits between D and the one who likes Brinjal. K neither likes pea nor likes Onion.

Q25. Who among the following likes Pea?
(a) B
(b) L
(c) R
(d) D
(e) T

Q26. How many persons sit between the one who likes Onion and K?
(a) None
(b) One
(c) Three
(d) Four
(e) Five

Q27. Which of the following statement(s) is/are true?
I. B likes Brinjal.
II. K is an immediate neighbour of one who likes Carrot.
III. One person sits between K and R.
(a)Only statement I is true.
(b) Only statement II is true.
(c) Both statements I and II are true.
(d) Both Statements I and III are true.
(e) All statements are true.

Q28. Who among the following sits immediate left of K?
(a) T
(b) L
(c) The one who likes Brinjal
(d) R
(e) The one who likes Pumpkin

Q29. Four of the following are alike in a certain way and thus formed a group, then who among the following doesn't belong to that group?
(a) R
(b) U
(c) L
(d) D
(e) T

Directions (30-33): A number arrangement machine when given an input of number rearranges them following a particular rule. The following is an illustration of input and rearrangement.
Input: 94 45 76 83 63 55
Step I: 45 94 76 83 63 55
Step II: 45 55 94 76 83 63
Step III: 45 55 63 94 76 83
Step IV: 45 55 63 76 94 83
Step V: 45 55 63 76 83 94
Step V is final step of the given Input. Now answer the following questions based on the following input.
Input: 67 85 49 38 26 15

Q30. Which of the following is 3rd element from the left end in step II?
(a) 26
(b) 49
(c) 38
(d) 67
(e) 15

Q31. What is the difference between the number which is 4th from the right end in step III and 2nd from the left end in last step?
(a) 23
(b) 12
(c) 41
(d) 59
(e) 29

Q32. How many steps are required to get the output?
(a) Four
(b) Five
(c) Six
(d) Three
(e) More than six

Q33. Which of the following order of elements comes in the same manner in the III step of the given Input?
(a) 15 26 49
(b) 67 49 38
(c) 38 67 85
(d) 15 38 49
(e) None of these

Directions (34-35): Study the following information carefully and answer the questions given below.
There are six members in a family of two generation with two married Couple. P is daughter-in-law of M. W is the only daughter of K who is mother of N. C is the married child of K.

Q34. How is C related to M?
(a) Son
(b) Daughter
(c) Brother
(d) Father
(e) None of these

Q35. How is N related to P?
(a) Brother
(b) Nephew
(c) Sister-in-law
(d) Brother-in-law
(e) Father

Directions (36-40): Study the following information carefully and answer the questions given below.

Six girls are arranged in a descending order according to their salary from left to right. Only two girls get less salary than Bhawna. Nikita who gets 45k salary which is more than both Sunayna and Bhawna but lower than Aastha. Sunayna gets more salary than Priya who gets just more salary than Anisha.

Q36. Who among the following gets the 2nd highest salary?
(a) Priya
(b) Nikita
(c) Aastha
(d) Sunayna
(e) None of these

Q37. If Bhawna gets 30k salary, then what will be the possible salary of Sunayna?
(a) 20k
(b) 46k
(c) 50k
(d) 28k
(e) 38k

Q38. How many girls get lower salary than Sunayna?
(a) One
(b) Two
(c) Four
(d) Three
(e) None of these

Q39. If all the girls are arranged according to their name in the English alphabetical order from left to right of, then the positions of how many girls remain unchanged?
(a) None
(b) Two
(c) Three
(d) One
(e) None of these

Q40. How many girls get more salary than Priya?
(a) Two
(b) One
(c) Three
(d) Four
(e) None of these

Directions (41-45): Line graph given below shows total tickets booked and total AC tickets booked in five trains (A, B, C, D & E). Read the data carefully and answer the questions.

Note - Total tickets booked = Tickets booked in (AC +sleeper)

total ticket booked / बुक किए गए कुल टिकेट
ticket booked in AC class / एसी क्लास में बुक किए गए टिकट
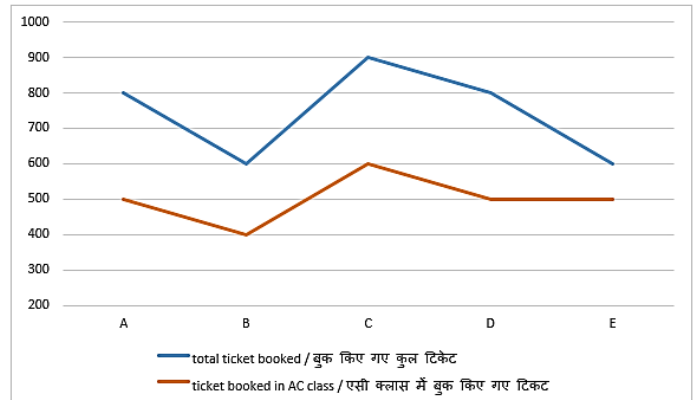
Q41. Total tickets booked in train D is what percent more than total tickets booked in train E?
(a) 33.33%
(b) 66.66%
(c) 14%
(d) 30%
(e) 25%

Q42. Find the ratio of total sleeper tickets booked in trains B and C together to total AC tickets booked in train A?
(a) 1 : 10
(b) 11 : 1
(c) 1 : 1
(d) 3 : 4
(e) 9 : 7

Q43. If total tickets booked in train F is 150% more than total sleeper tickets booked in train D and total AC tickets booked in train F is 20% more than total AC tickets booked in train B, then find the total sleeper tickets booked in train F?
(a) 300
(b) 750
(c) 400
(d) 270
(e) 480

Q44. Find the average of total sleeper tickets booked in trains A, B & C?
(a) 260
(b) $266\frac{2}{3}$
(c) $266\frac{1}{3}$
(d) $166\frac{2}{3}$
(e) 266

Q45. Total sleeper tickets booked in train A is what percent of total sleeper tickets booked in D & E together?
(a) 50%
(b) 75%
(c) 60%
(d) 80%
(e) 65%

Directions (46-50): Table given below shows total number of students and the ratio of boys to girls in five (A, B, C, D & E) different schools. Read the data carefully and answer the questions.

Note: Total number of students in any school = total number of boys + total number of girls

Schools / स्कूल	Total students / कुल छात्र	Ratio of boys to girls / लड़कों का लड़कियों से अनुपात
A	800	3:2
B	600	7:3
C	900	1:1
D	1200	13:7
E	1000	7:3

Q46. Total girls in A are how much more or less than total girls in school E?
(a) 10
(b) 20
(c) 40
(d) 30
(e) 50

Q47. Find the average number of girls in school B & D?
(a) 200
(b) 300
(c) 360
(d) 250
(e) 180

Q48. Total boys in C are what percent more than total girls in school E?
(a) 30%
(b) 55%
(c) 60%
(d) 40%
(e) 50%

Q49. If total students in school F is 40% more than that in B and total boys in school F is 150 more than that in A, then find total girls in school F?
(a) 240
(b) 210
(c) 270
(d) 190
(e) 170

Q50. Find the ratio of total boys in school C & D together to total students in school B?
(a) 41 : 16
(b) 41 : 12
(c) 41 : 14
(d) 41 : 18
(e) 41 : 20

Directions (51-58): What will come in the place of question (?) mark in following questions.

Q51. $4\frac{5}{8} + \frac{3}{2} - 2\frac{2}{3} = ?$
(a) $2\frac{7}{24}$
(b) $3\frac{11}{24}$
(c) $6\frac{11}{24}$
(d) $5\frac{5}{24}$
(e) $4\frac{7}{24}$

Q52. $7 \times ? + \sqrt{1369} - \sqrt{2025} = \sqrt[3]{2197}$
(a) 14
(b) 28
(c) 21
(d) 3
(e) 7

Q53. $360 - 80\% \, of \, 1200 = 24\% \, of \, ?^3 - 840$
(a) 20
(b) 10
(c) 24
(d) 1
(e) 15

Q54. 28% of 75 + 6×? = 21^2
(a) 70
(b) 40
(c) 16
(d) 60
(e) 44

Q55. 3554 – 4896 + 4095 ÷3= ?
(a) 23
(b) 22
(c) 12
(d) 24
(e) 62

Q56. (24% of 1250) ÷ 0.75 = ?
(a) 800
(b) 1600
(c) 40
(d) 4000
(e) 400

Q57. $150 \times 39 \div 3 - 950 = ?$
(a) 500
(b) 100
(c) 1000
(d) 800
(e) 600

Q58. $(36 \times 8) - (440 \div 8) = ?$
(a) 221
(b) 252
(c) 233
(d) 278
(e) 215

Q59. The perimeter of a rectangular park is equal to the circumference of a circle whose radius is 203 meters. If the length of rectangle is $\frac{22}{7}$ times of its breadth, then find the breadth of the park?
(a) 156 m
(b) 158 m
(c) 160 m
(d) 154 m
(e) 164 m

Q60. Pipe A alone can fill a tank in 20 hours and pipe B alone can fill the same tank in 30 hours. Pipe C empty the same tank in 5 hours. If pipe A and B are open for 20 hours, then find how much time pipe C takes to empty the tank?
(a) $\frac{25}{3}$ hours
(b) $\frac{90}{11}$ hours
(c) $\frac{20}{11}$ hours
(d) $\frac{10}{11}$ hours
(e) $\frac{40}{11}$ hours

Q61. A alone can complete a piece of work in 10 days, while B alone can do the same work in 12 days. B work for 9 days alone and after that he left the work. If remaining work complete by C whose efficiency is half of efficiency A, then find in how many days C complete the remaining work.
(a) 12 days
(b) 5 days
(c) 10 days
(d) 15 days
(e) 9 days

Q62. If the speed of boat in upstream and in downstream is 10 km/h and 15 km/h respectively, then find the total distance covered by boat in still water in 4 hours?
(a) 80 km
(b) 90 km
(c) 20 km
(d) 50 km
(e) 44 km

Q63. A is six years older than B and the ratio of present age of C to that of A is 10: 9. If two years hence the sum of ages of A & B will be 34 years, then find the present age of C?
(a) 30 years
(b) 32 years
(c) 28 years
(d) 24 years
(e) 20 years

Q64. If the difference between compound interest and simple interest at the end of two years at rate of 10% p.a. is Rs.50, then find the simple interest on the same sum at the same rate of interest for three years? (in Rs.)
(a) 1500
(b) 2000
(c) 2500
(d) 2800
(e) 2200

Q65. The sum of two positive numbers is 44 and 50% of bigger number is equal to the 60% of the smaller number. Find the bigger number?
(a) 24
(b) 28
(c) 32
(d) 36
(e) 30

Q66. Amrit invested Rs. X in a scheme offering 10% p.a. at compound interest for two years. If the interest received by Amrit for only second year is Rs.4400, then find X?
(a) Rs.40,000
(b) Rs.15,000
(c) Rs.25,000
(d) Rs.30,000
(e) Rs.10,000

Q67. Average of five consecutive numbers is X. If the average of largest and second smallest number is 17.5, then find the value of X?
(a) 17
(b) 17.5
(c) 16
(d) 18.5
(e) 18

Q68. A 450 m long train cross a bridge in 36 seconds. If the ratio of length of train to bridge is 1:3, then find the speed of the train?
(a) 180 kmph
(b) 150 kmph
(c) 60 kmph
(d) 90 kmph
(e) 120 kmph

Q69. A and B enter into a partnership with their initial capital of Rs.10000 and Rs.12000 respectively. After three months, C also joins them with 20% more capital than A's capital. If at the end of the year profit share of B is Rs.1200, then find the profit share of C?
(a) Rs. 6009
(b) Rs. 800
(c) Rs. 1000
(d) Rs. 1100
(e) Rs. 900

Q70. A shopkeeper sold an article at 30% discount and still earned a profit of 40%. If the difference between marked price and cost price is Rs.1500 then find the selling price of the article?
(a) Rs.2000
(b)Rs.1100
(c) Rs.700
(d) Rs.4200
(e) Rs.2100

Directions (71-75): In the following questions, two equations (I) and (II) are given. You have to solve both equations and mark the appropriate option.

Q71.
I. $x^2 - 18x + 65 = 0$
II. $y^2 - 10y + 21 = 0$

(a) x>y
(b) x<y
(c) x≥y
(d) x≤y
(e) x=y or no relation.

Q72.
I. $4x^2 - 12x + 9 = 0$
II. $3y^2 - 5y + 2 = 0$

(a) x>y
(b) x<y
(c) x≥y
(d) x≤y
(e) x=y or no relation.

Q73.
I. $(x + 4)^2 = 16$
II. $(y + 1)^2 = 49$

(a) x>y
(b) x<y
(c) x≥y
(d) x≤y
(e) x=y or no relation.

Q74.
I. $x^2 + x - 72 = 0$
II. $y^2 - 19y + 90 = 0$

(a) x>y
(b) x<y
(c) x≥y
(d) x≤y
(e) x=y or no relation.

Q75.
I. $x^2 + 4x - 96 = 0$
II. $y^2 - 28y + 196 = 0$

(a) x>y
(b) x<y
(c) x≥y
(d) x≤y
(e) x=y or no relation.

Directions (76-80): What will come in the place of (?) in the following number series:

Q76. 70, 90, ?, 154, 198, 250
(a) 112
(b) 130
(c) 124
(d) 118
(e) 106

Q77. 9, 19, 58, ?, 1166, 6997
(a) 272
(b) 240
(c) 233
(d) 250
(e) 239

Q78. 49, 53, 61, 77, 109, ?
(a) 157
(b) 159
(c) 173
(d) 163
(e) 155

Q79. 128, 64 , 64, 96, 192, ?
(a) 460
(b) 440
(c) 480
(d) 400
(e) 280

Q80. 9, 17, 33, ?, 129, 257, 513
(a) 66
(b) 64
(c) 62
(d) 60
(e) 65

Solutions

S1. Ans.(c)
Sol. There are two letters (AG6, OG5)

S2. Ans.(d)
Sol. 13th element from left end = 4 and 10th element from right end = V
Thus, there are 15 letters between 4 and V (W D R Q G S J L A P Q V D T W)

S3. Ans.(a)
Sol. 10th element from left end = O
Thus, 8th to the right of O = G

S4. Ans.(c)
Sol. There are Five numbers (G6V, S8Y, P4W, G9S, V2D)

S5. Ans.(b)
Sol. 15th from the left end of the series = D

S6. Ans.(a)
Sol. Four boxes are placed between the box D and box E which is placed just above the box H. There are two possible cases as: -

Boxes (Case 1)	Boxes (Case 2)
D	E
	H
E	D
H	

Two boxes are placed between the box H and box F. Here, one more possibility comes from Case 2 as: -

Boxes (Case 1)	Boxes (Case 2)	Boxes (Case 2a)
D	E	F
	H	
		E
F		H
	F	
E	D	
H		
		D

Box B is placed just below the box G and above box C. Number of boxes place above box D is same as placed below box C. Here, case 2 and case 2a is ruled out as not satisfying the condition of placing C, so: -

Boxes (Case 1)	~~Boxes (Case 2)~~	~~Boxes (Case 2a)~~
D	~~E~~	~~F~~
G	~~H~~	
B	~~G~~	~~E~~
F	~~B~~	~~H~~
	~~F~~	~~G~~
E	~~D~~	~~B~~
H		~~C~~
C		~~D~~

We know, A is one of the boxes and one place is left so the final arrangement is: -

Boxes
D
G
B
F
A
E
H
C

No box is placed between box A and box E.

S7. Ans.(d)
Sol. Four boxes are placed between the box D and box E which is placed just above the box H. There are two possible cases as: -

Boxes (Case 1)	Boxes (Case 2)
D	E
	H
E	D
H	

Two boxes are placed between the box H and box F. Here, one more possibility comes from Case 2 as: -

Boxes (Case 1)	Boxes (Case 2)	Boxes (Case 2a)
D	E	F
	H	
		E
F		H
	F	
E	D	
H		
		D

Box B is placed just below the box G and above box C. Number of boxes place above box D is same as placed below box C. Here, case 2 and case 2a is ruled out as not satisfying the condition of placing C, so: -

Boxes (Case 1)	~~Boxes (Case 2)~~	~~Boxes (Case 2a)~~
D	~~E~~	~~F~~
G	~~H~~	
B	~~G~~	~~E~~
F	~~B~~	~~H~~
	~~F~~	~~G~~
E	~~D~~	~~B~~
H		~~G~~
C		~~D~~

We know, A is one of the boxes and one place is left so the final arrangement is: -

Boxes
D
G
B
F
A
E
H
C

Box D is placed just above the box G.

S8. Ans.(c)
Sol. Four boxes are placed between the box D and box E which is placed just above the box H. There are two possible cases as: -

Boxes (Case 1)	Boxes (Case 2)
D	E
	H
E	D
H	

Two boxes are placed between the box H and box F. Here, one more possibility comes from Case 2 as: -

Boxes (Case 1)	Boxes (Case 2)	Boxes (Case 2a)
D	E	F
	H	
		E
F		H
	F	
E	D	
H		
		D

Box B is placed just below the box G and above box C. Number of boxes place above box D is same as placed below box C. Here, case 2 and case 2a is ruled out as not satisfying the condition of placing C, so: -

Boxes (Case 1)	~~Boxes (Case 2)~~	~~Boxes (Case 2a)~~
D	~~E~~	~~F~~
G	~~H~~	
B	~~G~~	~~E~~
F	~~B~~	~~H~~
	~~F~~	~~G~~
E	~~D~~	~~B~~
H		~~G~~
C		~~D~~

We know, A is one of the boxes and one place is left so the final arrangement is: -

Boxes
D
G
B
F
A
E
H
C

Three boxes are placed below box A.

S9. Ans.(a)
Sol. Four boxes are placed between the box D and box E which is placed just above the box H. There are two possible cases as: -

Boxes (Case 1)	Boxes (Case 2)
D	E
	H
E	D
H	

Two boxes are placed between the box H and box F. Here, one more possibility comes from Case 2 as: -

Boxes (Case 1)	Boxes (Case 2)	Boxes (Case 2a)
D	E	F
	H	
		E
F		H
	F	
E	D	
H		
		D

Box B is placed just below the box G and above box C. Number of boxes place above box D is same as placed below box C. Here, case 2 and case 2a is ruled out as not satisfying the condition of placing C, so: -

Boxes (Case 1)	~~Boxes (Case 2)~~	~~Boxes (Case 2a)~~
D	~~E~~	~~F~~
G	~~H~~	
B	~~G~~	~~E~~
F	~~B~~	~~H~~
	~~F~~	~~G~~
E	~~D~~	~~B~~
H		~~C~~
C		~~D~~

We know, A is one of the boxes and one place is left so the final arrangement is: -

Boxes
D
G
B
F
A
E
H
C

No box will remain at same position.

Boxes	Alphabetical Order
D	A
G	B
B	C
F	D
A	E
E	F
H	G
C	H

S10. Ans.(b)
Sol. Four boxes are placed between the box D and box E which is placed just above the box H. There are two possible cases as: -

Boxes (Case 1)	Boxes (Case 2)
D	E
	H
E	D
H	

Two boxes are placed between the box H and box F. Here, one more possibility comes from Case 2 as: -

Boxes (Case 1)	Boxes (Case 2)	Boxes (Case 2a)
D	E	F
	H	
		E
F		H
	F	
E	D	
H		
		D

Box B is placed just below the box G and above box C. Number of boxes place above box D is same as placed below box C. Here, case 2 and case 2a is ruled out as not satisfying the condition of placing C, so: -

Boxes (Case 1)	Boxes (Case 2)	Boxes (Case 2a)
D	E	F
G	H	
B	G	E
F	B	H
	F	G
E	D	B
H		C
C		D

We know, A is one of the boxes and one place is left so the final arrangement is: -

Boxes
D
G
B
F
A
E
H
C

1st box in the given question is placed just above the 2nd box, so box H is related to box C.

S11. Ans.(b)
Sol.
There are three pairs.

ASSIGNMENT

S12. Ans.(b)
Sol. I. Not Follows- Because it is already given that only a few Zero are Hero, so all Zero cannot be Hero even in possibility.
II. Follows- Because it is given that no Actor is Hero, so the part of Actor which is Male cannot be Hero.
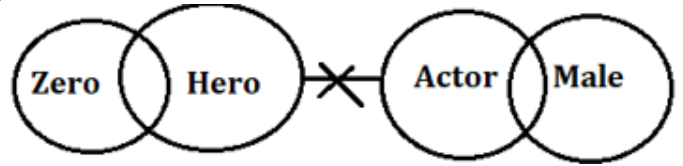
S13. Ans.(e)
Sol. I. Follows- Because Some A3 are J5 and all J5 is G2 so it is clear that Some G2 is A3.
II. Follows- Because it is given that only C8 is related to A3, so relation of C8 with any other element is not possible.
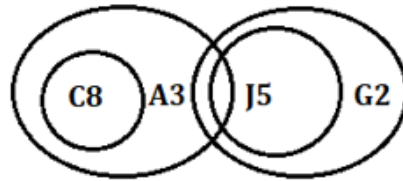
S14. Ans.(d)
Sol. I. Not Follows- Because Water is only related with Ocean, so relation of Water with any other element is not follows even in possibility.
II. Not Follows- Because No ocean is Sea and some Sea are Ponds, so all Ponds cannot be Ocean.
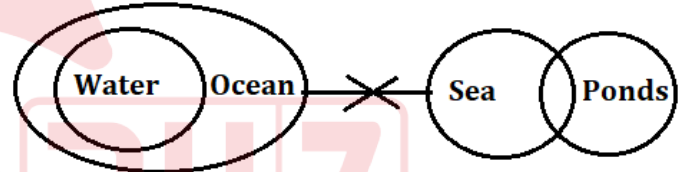
S15. Ans.(a)
Sol. I. Follows- Because there is no relation between Exam and Quiz, so their relation will follow in possibility.
II. Not Follows- Because there is no direct relation between Quiz and Hard, so their relation will follow only in possibility.
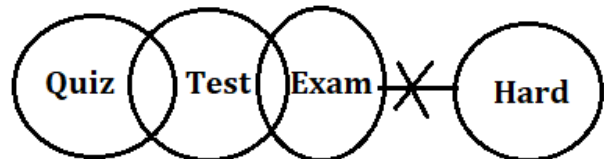
S16. Ans.(c)
Sol. Given Number-7326949784
Number after arranged in ascending order = 2344677899
Number after changing all the digit to its just preceding number = 1233566788
4th digit from the left end = 3 and 4th digit from right end = 6
Thus, the sum of the numbers is 3 + 6 = 9.

S17. Ans.(d)
Sol. Raj and Reena like same brand but not Samsung. There are two possible cases are they may like Apple or MI.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj				Raj	
Reena				Reena	

Riya doesn't like Samsung. So, she will like MI in Case 1 and Apple in Case 2 as each brand is liked by only one girl. Rohit is the only boy who likes Samsung, so Ritu will also like Samsung in both the cases as each brand is liked by only one girl.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj	Riya	Rohit	Riya	Raj	Rohit
Reena		Ritu		Reena	Ritu

Rohan and Robin like same brand but not Apple, so they will like MI in Case 1 as it is given that not more than three persons like any of the brand and here Case 2 is eliminated as not satisfying this condition.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj	Riya	Rohit	Riya	Raj	Rohit
Reena	Rohan	Ritu		Reena	Ritu
	Robin				

We know, Rahul is one of the persons so he will like Apple as not more than three persons like any of the brand and Rohit is the only boy who likes Samsung. Thus, the final arrangement is: -

Apple	MI	Samsung
Raj	Riya	Rohit
Reena	Rohan	Ritu
Rahul	Robin	

Both Reena and Rahul like Apple brand.

S18. Ans.(e)
Sol. Raj and Reena like same brand but not Samsung. There are two possible cases are they may like Apple or MI.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj				Raj	
Reena				Reena	

Riya doesn't like Samsung. So, she will like MI in Case 1 and Apple in Case 2 as each brand is liked by only one girl. Rohit is the only boy who likes Samsung, so Ritu will also like Samsung in both the cases as each brand is liked by only one girl.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj	Riya	Rohit	Riya	Raj	Rohit
Reena		Ritu		Reena	Ritu

Rohan and Robin like same brand but not Apple, so they will like MI in Case 1 as it is given that not more than three persons like any of the brand and here Case 2 is eliminated as not satisfying this condition.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj	Riya	Rohit	Riya	Raj	Rohit
Reena	Rohan	Ritu		Reena	Ritu
	Robin				

We know, Rahul is one of the persons so he will like Apple as not more than three persons like any of the brand and Rohit is the only boy who likes Samsung. Thus, the final arrangement is: -

Apple	MI	Samsung
Raj	Riya	Rohit
Reena	Rohan	Ritu
Rahul	Robin	

All statements are true.

S19. Ans.(b)
Sol. Raj and Reena like same brand but not Samsung. There are two possible cases are they may like Apple or MI.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj				Raj	
Reena				Reena	

Riya doesn't like Samsung. So, she will like MI in Case 1 and Apple in Case 2 as each brand is liked by only one girl. Rohit is the only boy who likes Samsung, so Ritu will also like Samsung in both the cases as each brand is liked by only one girl.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj	Riya	Rohit	Riya	Raj	Rohit
Reena		Ritu		Reena	Ritu

Rohan and Robin like same brand but not Apple, so they will like MI in Case 1 as it is given that not more than three persons like any of the brand and here Case 2 is eliminated as not satisfying this condition.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj	Riya	Rohit	Riya	Raj	Rohit
Reena	Rohan	Ritu		Reena	Ritu
	Robin				

We know, Rahul is one of the persons so he will like Apple as not more than three persons like any of the brand and Rohit is the only boy who likes Samsung. Thus, the final arrangement is: -

Apple	MI	Samsung
Raj	Riya	Rohit
Reena	Rohan	Ritu
Rahul	Robin	

Riya and Rohan likes same brand i.e., MI.

S20. Ans.(d)
Sol. Raj and Reena like same brand but not Samsung. There are two possible cases are they may like Apple or MI.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj				Raj	
Reena				Reena	

Riya doesn't like Samsung. So, she will like MI in Case 1 and Apple in Case 2 as each brand is liked by only one girl. Rohit is the only boy who likes Samsung, so Ritu will also like Samsung in both the cases as each brand is liked by only one girl.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj	Riya	Rohit	Riya	Raj	Rohit
Reena		Ritu		Reena	Ritu

Rohan and Robin like same brand but not Apple, so they will like MI in Case 1 as it is given that not more than three persons like any of the brand and here Case 2 is eliminated as not satisfying this condition.

Case 1			~~Case 2~~		
Apple	MI	Samsung	~~Apple~~	~~MI~~	~~Samsung~~
Raj	Riya	Rohit	~~Riya~~	~~Raj~~	~~Rohit~~
Reena	Rohan	Ritu		~~Reena~~	~~Ritu~~
	Robin				

We know, Rahul is one of the persons so he will like Apple as not more than three persons like any of the brand and Rohit is the only boy who likes Samsung. Thus, the final arrangement is: -

Apple	MI	Samsung
Raj	Riya	Rohit
Reena	Rohan	Ritu
Rahul	Robin	

Robin-MI is correct combination.

S21. Ans.(d)
Sol. Raj and Reena like same brand but not Samsung. There are two possible cases are they may like Apple or MI.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj				Raj	
Reena				Reena	

Riya doesn't like Samsung. So, she will like MI in Case 1 and Apple in Case 2 as each brand is liked by only one girl. Rohit is the only boy who likes Samsung, so Ritu will also like Samsung in both the cases as each brand is liked by only one girl.

Case 1			Case 2		
Apple	MI	Samsung	Apple	MI	Samsung
Raj	Riya	Rohit	Riya	Raj	Rohit
Reena		Ritu		Reena	Ritu

Rohan and Robin like same brand but not Apple, so they will like MI in Case 1 as it is given that not more than three persons like any of the brand and here Case 2 is eliminated as not satisfying this condition.

Case 1			~~Case 2~~		
Apple	MI	Samsung	~~Apple~~	~~MI~~	~~Samsung~~
Raj	Riya	Rohit	~~Riya~~	~~Raj~~	~~Rohit~~
Reena	Rohan	Ritu		~~Reena~~	~~Ritu~~
	Robin				

We know, Rahul is one of the persons so he will like Apple as not more than three persons like any of the brand and Rohit is the only boy who likes Samsung. Thus, the final arrangement is: -

Apple	MI	Samsung
Raj	Riya	Rohit
Reena	Rohan	Ritu
Rahul	Robin	

Both Robin and Rohan like the same brand which is liked by Riya.

S22. Ans.(d)
Sol. I. W > Z (False) II. M ≥ S (False)

S23. Ans.(c)
Sol. I. O = G (False) II. G < O (False)

S24. Ans.(b)
Sol. I. T ≥ M (False) II. U > W (True)

S25. Ans.(b)
Sol. Four persons sit between B and the one who likes Onion. L sits immediate left of the one who likes Onion. L sits immediate left of the one who likes Onion. There are three possible cases as: -

(Case 3)

```
Onion
├──┬──┬──┬──┬──┬──┤
   B              L
```
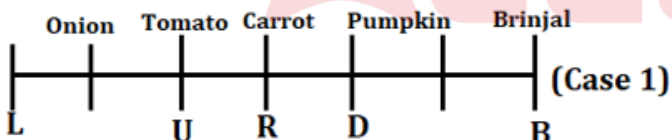
Three persons sit between L and the one who likes Pumpkin. B neither likes Pumpkin nor likes Carrot. Here, Case 2 and Case 3 is eliminated as not satisfying the given condition: -
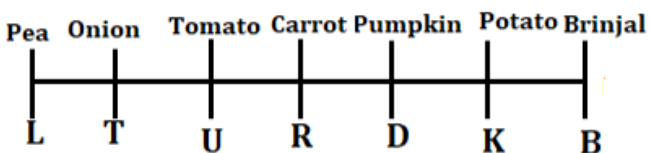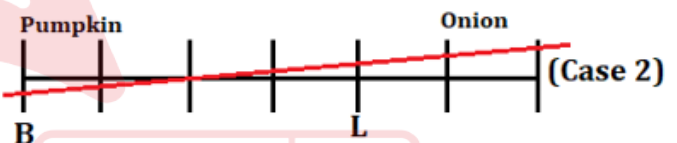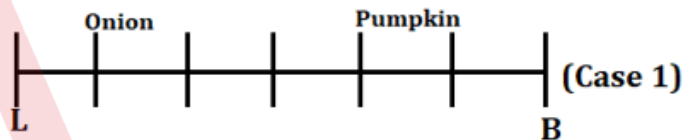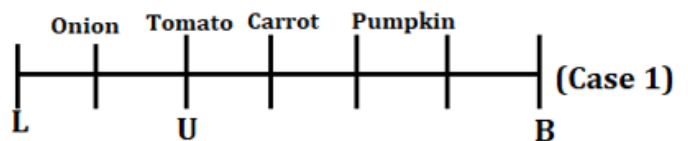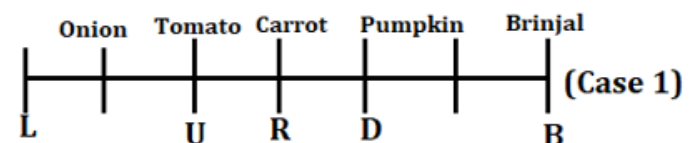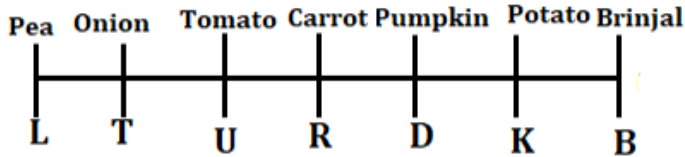
```
      Onion            Pumpkin
├──┬──┬──┬──┬──┬──┤        (Case 1)
L                 B
```

```
Pumpkin              Onion
├──┬──┬──┬──┬──┬──┤        (Case 2)
B              L
```

```
   Pumpkin              Onion
├──┬──┬──┬──┬──┬──┤        (Case 3)
   B              L
```

U likes Tomato and sits immediate left of the one who likes Carrot. B neither likes Pumpkin nor likes Carrot.

```
Onion  Tomato Carrot  Pumpkin
├──┬──┬──┬──┬──┬──┤        (Case 1)
L      U             B
```

The number of persons sit to the right of D is one less than the number of persons sit to the left of R. One person sits between D and the one who likes Brinjal. R doesn't like pumpkin. So, D will sit 3rd from right end and R will sits at 4th from left end of the row.

```
Onion  Tomato Carrot  Pumpkin  Brinjal
├──┬──┬──┬──┬──┬──┤        (Case 1)
L      U     R     D     B
```

K neither likes pea nor likes Onion. So, K will sit immediate left of B as no other place left according to the given condition and likes Potato. Also, we know T is one of the persons thus T will like Onion and pea is one of the vegetables which will be liked by L. Thus, the final arrangement is: -
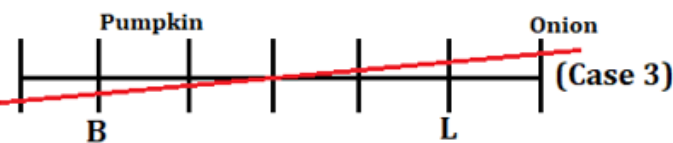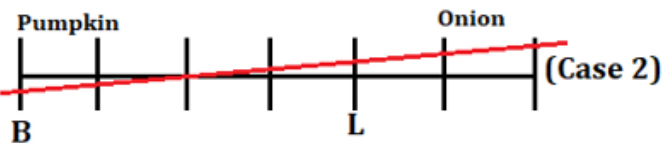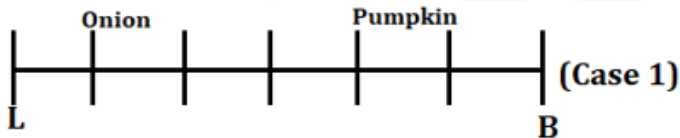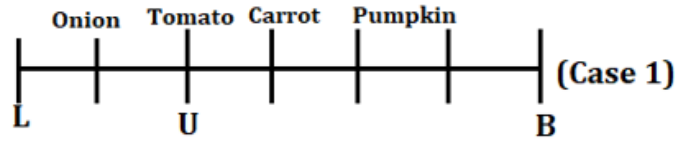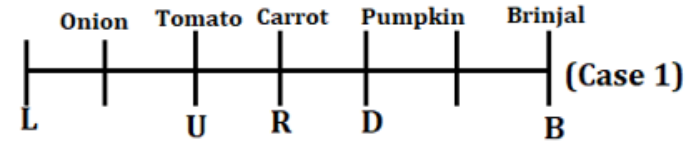
```
Pea  Onion  Tomato Carrot Pumpkin  Potato Brinjal
├──┬──┬──┬──┬──┬──┬──┤
L    T     U     R     D     K     B
```

L likes Pea.

S26. Ans.(c)
Sol. Four persons sit between B and the one who likes Onion. L sits immediate left of the one who likes Onion. L sits immediate left of the one who likes Onion. There are three possible cases as: -

```
   Onion
├──┬──┬──┬──┬──┬──┤        (Case 1)
L                 B
```

```
                  Onion
├──┬──┬──┬──┬──┬──┤        (Case 2)
B           L
```

```
                     Onion
├──┬──┬──┬──┬──┬──┤        (Case 3)
   B              L
```

Three persons sit between L and the one who likes Pumpkin. B neither likes Pumpkin nor likes Carrot. Here, Case 2 and Case 3 is eliminated as not satisfying the given condition: -
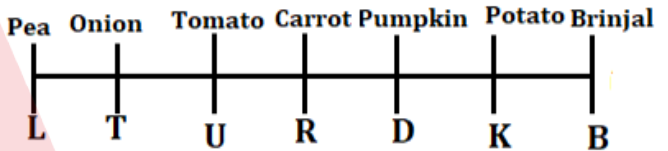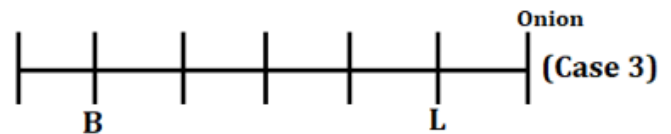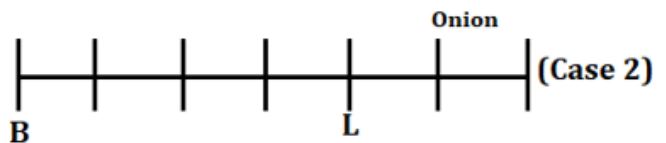
```
   Onion            Pumpkin
├──┬──┬──┬──┬──┬──┤        (Case 1)
L                 B
```

```
Pumpkin              Onion
├──┬──┬──┬──┬──┬──┤        (Case 2)
B              L
```

```
   Pumpkin              Onion
├──┬──┬──┬──┬──┬──┤        (Case 3)
   B              L
```

U likes Tomato and sits immediate left of the one who likes Carrot. B neither likes Pumpkin nor likes Carrot.

```
Onion  Tomato Carrot  Pumpkin
├──┬──┬──┬──┬──┬──┤        (Case 1)
L      U             B
```

The number of persons sit to the right of D is one less than the number of persons sit to the left of R. One person sits between D and the one who likes Brinjal. R doesn't like pumpkin. So, D will sit 3rd from right end and R will sits at 4th from left end of the row.

```
Onion  Tomato Carrot  Pumpkin  Brinjal
├──┬──┬──┬──┬──┬──┤        (Case 1)
L      U     R     D     B
```
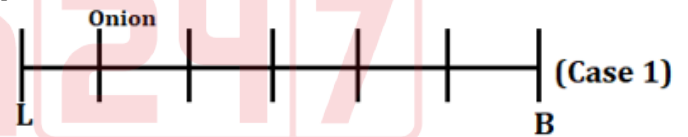
K neither likes pea nor likes Onion. So, K will sit immediate left of B as no other place left according to the given condition and likes Potato. Also, we know T is one of the persons thus T will like Onion and pea is one of the vegetables which will be liked by L. Thus, the final arrangement is: -
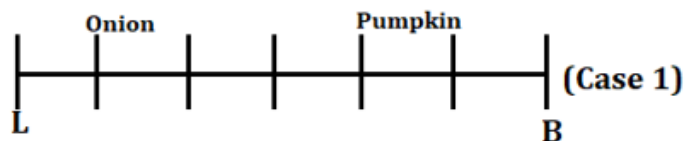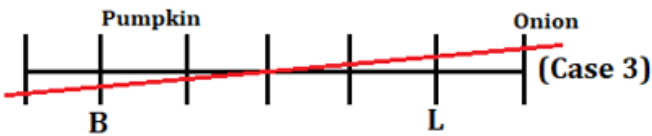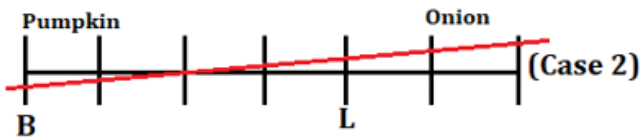
Pea Onion Tomato Carrot Pumpkin Potato Brinjal
L   T   U   R   D   K   B

Three persons sit between the one who likes Onion and K.

S27. Ans.(d)
Sol. Four persons sit between B and the one who likes Onion. L sits immediate left of the one who likes Onion. L sits immediate left of the one who likes Onion. There are three possible cases as: -

Onion
L .... B (Case 1)

Onion
B .... L (Case 2)

Onion
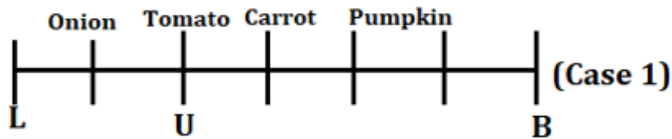B .... L (Case 3)

Three persons sit between L and the one who likes Pumpkin. B neither likes Pumpkin nor likes Carrot. Here, Case 2 and Case 3 is eliminated as not satisfying the given condition: -
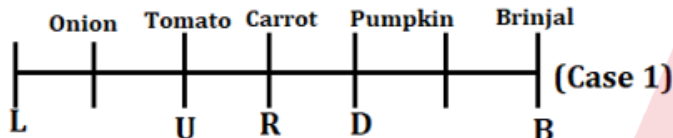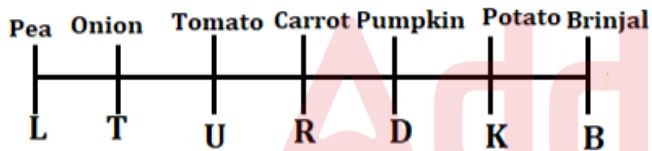
Onion   Pumpkin
L .... B (Case 1)

Pumpkin   Onion
B .... L (Case 2)

Pumpkin   Onion
B .... L (Case 3)

U likes Tomato and sits immediate left of the one who likes Carrot. B neither likes Pumpkin nor likes Carrot.

Onion Tomato Carrot Pumpkin
L   U   B (Case 1)

The number of persons sit to the right of D is one less than the number of persons sit to the left of R. One person sits between D and the one who likes Brinjal. R doesn't like pumpkin. So, D will sit 3rd from right end and R will sits at 4th from left end of the row.

Onion Tomato Carrot Pumpkin Brinjal
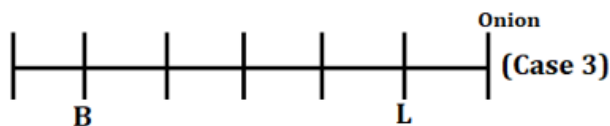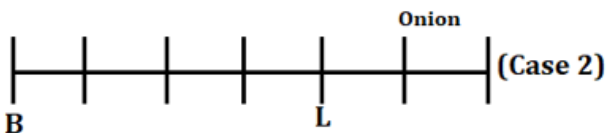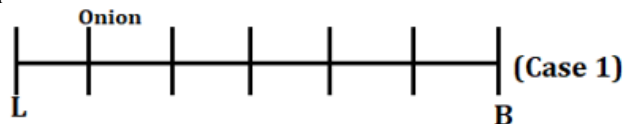L   U   R   D   B (Case 1)

K neither likes pea nor likes Onion. So, K will sit immediate left of B as no other place left according to the given condition and likes Potato. Also, we know T is one of the persons thus T will like Onion and pea is one of the vegetables which will be liked by L. Thus, the final arrangement is: -
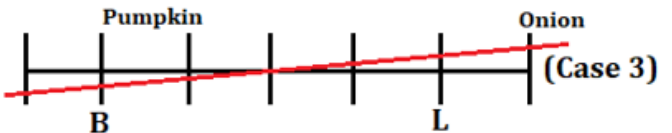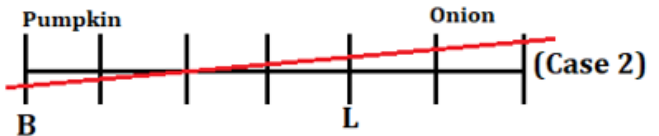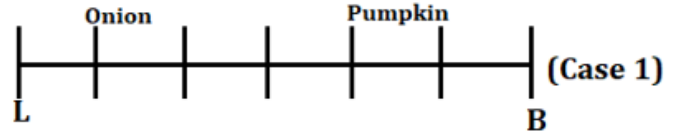
Pea Onion Tomato Carrot Pumpkin Potato Brinjal
L   T   U   R   D   K   B

Both Statements I and III are true.
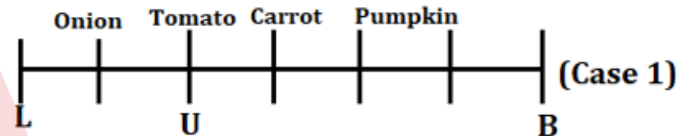
S28. Ans.(e)
Sol. Four persons sit between B and the one who likes Onion. L sits immediate left of the one who likes Onion. L sits immediate left of the one who likes Onion. There are three possible cases as: -

Onion
L .... B (Case 1)

Onion
B .... L (Case 2)
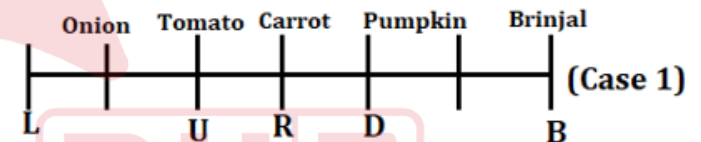
Onion
B .... L (Case 3)

Three persons sit between L and the one who likes Pumpkin. B neither likes Pumpkin nor likes Carrot. Here, Case 2 and Case 3 is eliminated as not satisfying the given condition: -
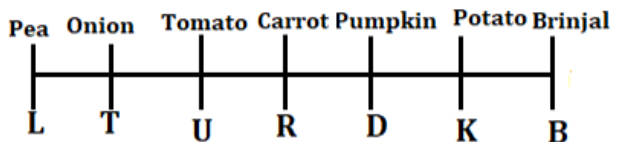
Onion   Pumpkin
L .... B (Case 1)

(Case 2)
Pumpkin ... Onion, B ... L

(Case 3)
Pumpkin ... Onion, B ... L

U likes Tomato and sits immediate left of the one who likes Carrot. B neither likes Pumpkin nor likes Carrot.

Onion Tomato Carrot Pumpkin (Case 1)
L U B

The number of persons sit to the right of D is one less than the number of persons sit to the left of R. One person sits between D and the one who likes Brinjal. R doesn't like pumpkin. So, D will sit 3rd from right end and R will sits at 4th from left end of the row.

Onion Tomato Carrot Pumpkin Brinjal (Case 1)
L U R D B

K neither likes pea nor likes Onion. So, K will sit immediate left of B as no other place left according to the given condition and likes Potato. Also, we know T is one of the persons thus T will like Onion and pea is one of the vegetables which will be liked by L. Thus, the final arrangement is: -

Pea Onion Tomato Carrot Pumpkin Potato Brinjal
L T U R D K B

The one who likes Pumpkin sits immediate left of K.

S29. Ans.(c)
Sol. Four persons sit between B and the one who likes Onion. L sits immediate left of the one who likes Onion. L sits immediate left of the one who likes Onion. There are three possible cases as: -

Onion (Case 1)
L B

Onion (Case 2)
B L

Onion (Case 3)
B L

Three persons sit between L and the one who likes Pumpkin. B neither likes Pumpkin nor likes Carrot. Here, Case 2 and Case 3 is eliminated as not satisfying the given condition: -

Onion Pumpkin (Case 1)
L B

Pumpkin Onion (Case 2)
B L

Pumpkin Onion (Case 3)
B L

U likes Tomato and sits immediate left of the one who likes Carrot. B neither likes Pumpkin nor likes Carrot.

Onion Tomato Carrot Pumpkin (Case 1)
L U B

The number of persons sit to the right of D is one less than the number of persons sit to the left of R. One person sits between D and the one who likes Brinjal. R doesn't like pumpkin. So, D will sit 3rd from right end and R will sits at 4th from left end of the row.

Onion Tomato Carrot Pumpkin Brinjal (Case 1)
L U R D B

K neither likes pea nor likes Onion. So, K will sit immediate left of B as no other place left according to the given condition and likes Potato. Also, we know T is one of the persons thus T will like Onion and pea is one of the vegetables which will be liked by L. Thus, the final arrangement is: -

Pea Onion Tomato Carrot Pumpkin Potato Brinjal
L T U R D K B

All the persons given in the option sits at middle of the row except L who sits at the extreme end of the row.

S30. Ans.(d)
Sol. Logic: All numbers are arranged in ascending order from left to right in each step.
Input: 67 85 49 38 26 15
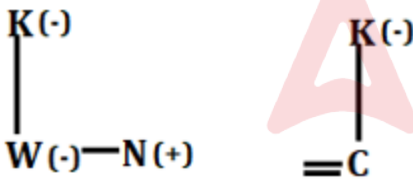Step I: 15 67 85 49 38 26
Step II: 15 26 67 85 49 38
Step III: 15 26 38 67 85 49
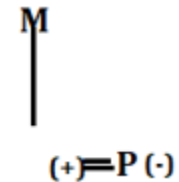Step IV: 15 26 38 49 67 85
67 is the 3rd element from left end in step II.

S31. Ans.(b)
Sol. Logic: All numbers are arranged in ascending order from left to right in each step.
Input: 67 85 49 38 26 15
Step I: 15 67 85 49 38 26
Step II: 15 26 67 85 49 38
Step III: 15 26 38 67 85 49
Step IV: 15 26 38 49 67 85
4th element from the right end in step III = 38
2nd element from the left end in last step = 26
Thus, the difference between is 38 – 26 = 12.

S32. Ans.(a)
Sol. Logic: All numbers are arranged in ascending order from left to right in each step.
Input: 67 85 49 38 26 15
Step I: 15 67 85 49 38 26
Step II: 15 26 67 85 49 38
Step III: 15 26 38 67 85 49
Step IV: 15 26 38 49 67 85
Four steps are required to get the output.

S33. Ans.(c)
Sol. Logic: All numbers are arranged in ascending order from left to right in each step.
Input: 67 85 49 38 26 15
Step I: 15 67 85 49 38 26
Step II: 15 26 67 85 49 38
Step III: 15 26 38 67 85 49
Step IV: 15 26 38 49 67 85
38 67 85 are in same order in step III.

S34. Ans.(a)
Sol. W is the only daughter of K who is mother of N. So, N will be son of K and brother of W. Also,
C is the married child of K.

K(-)   K(-)
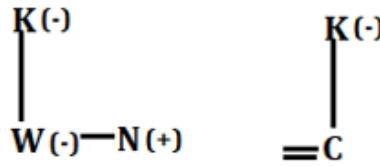|
W(-)—N(+)   =C

P is daughter-in-law of M.

M
|
(+)=P(-)

As the family has two married couple and two generation family so after combining the above diagrams, we get the final arrangement as: -
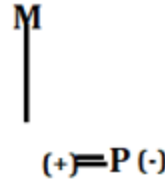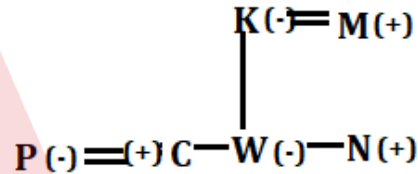
K(-)= M(+)
|
P(-)=(+)C—W(-)—N(+)
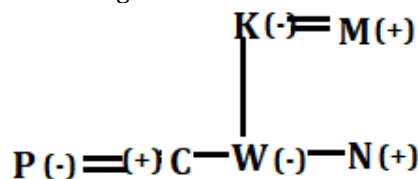
C is son of M.

S35. Ans.(d)
Sol. W is the only daughter of K who is mother of N. So, N will be son of K and brother of W. Also,
C is the married child of K.

K(-)   K(-)
| |
W(-)—N(+)   =C

P is daughter-in-law of M.

M
|
(+)=P(-)

As the family has two married couple and two generation family so after combining the above diagrams, we get the final arrangement as: -

K(-)= M(+)
|
P(-)=(+)C—W(-)—N(+)

N is brother-in-law of P.

S36. Ans.(b)
Sol. Only two girls get less salary than Bhawna.

___ > ___ > ___ > Bhawna > ___ > ___

Nikita who gets 45k salary which is more than both Sunayna and Bhawna but lower than Aastha. Sunayna gets more salary than Priya who gets just more salary than Anisha. Thus, the final arrangement is: -

Aastha > Nikita (45k) > Sunayna > Bhawna > Priya > Anisha
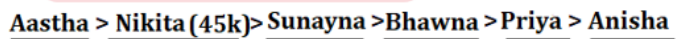
Nikita gets the 2nd highest salary.

S37. Ans.(e)
Sol. Only two girls get less salary than Bhawna.

_____ > _____ > _____ > Bhawna > _____ > _____

Nikita who gets 45k salary which is more than both Sunayna and Bhawna but lower than Aastha. Sunayna gets more salary than Priya who gets just more salary than Anisha. Thus, the final arrangement is: -

Aastha > Nikita (45k) > Sunayna > Bhawna > Priya > Anisha

The possible salary of Sunayna is 38k as Nikita gets 45k and Bhawna gets 30k.

S38. Ans.(d)
Sol. Only two girls get less salary than Bhawna.

_____ > _____ > _____ > Bhawna > _____ > _____

Nikita who gets 45k salary which is more than both Sunayna and Bhawna but lower than Aastha. Sunayna gets more salary than Priya who gets just more salary than Anisha. Thus, the final arrangement is: -

Aastha > Nikita (45k) > Sunayna > Bhawna > Priya > Anisha

Three girls (Bhawna, Priya, Anisha) get lower salary than Sunayna.

S39. Ans.(b)
Sol. Only two girls get less salary than Bhawna.

_____ > _____ > _____ > Bhawna > _____ > _____

Nikita who gets 45k salary which is more than both Sunayna and Bhawna but lower than Aastha. Sunayna gets more salary than Priya who gets just more salary than Anisha. Thus, the final arrangement is: -

Aastha > Nikita (45k) > Sunayna > Bhawna > Priya > Anisha

Two girls remain unchanged i.e., Aastha and Priya.
Aastha > Anisha > Bhawna > Nikita > Priya > Sunayna (alphabetical order)

S40. Ans.(d)
Sol. Only two girls get less salary than Bhawna.

_____ > _____ > _____ > Bhawna > _____ > _____

Nikita who gets 45k salary which is more than both Sunayna and Bhawna but lower than Aastha. Sunayna gets more salary than Priya who gets just more salary than Anisha. Thus, the final arrangement is: -

Aastha > Nikita (45k) > Sunayna > Bhawna > Priya > Anisha

Four girls get more salary than Priya.

S41. Ans.(a)
Sol.
Total tickets booked in train D = 800
Total tickets booked in train E = 600
Required percentage = $\frac{800-600}{600} \times 100 = 33.33\%$

S42. Ans.(c)
Sol.
Total tickets booked in sleeper class in trains B & C together
= (600 - 400) + (900 – 600) = =200+300=500
Required ratio = 500 : 500 = 1 : 1

S43. Ans.(d)
Sol.
Total tickets booked in train F = $(800 - 500) \times \frac{250}{100} = 750$
Total AC class tickets booked in train F = $400 \times \frac{120}{100} = 480$
So, total sleeper class tickets booked in train F = 750 – 480 = 270

S44. Ans.(b)
Sol.
Total sleeper class tickets booked in trains A, B & C = (800 – 500) + (600 – 400) + (900 – 600) = 300+200+300=800
Required average = $\frac{800}{3} = 266\frac{2}{3}$

S45. Ans.(b)
Sol.
Total sleeper class tickets booked in train A = (800 – 500) = 300
Total sleeper class tickets booked in train D & E= (800 – 500) + (600 – 500) = 300+100=400
Required percentage = $\frac{300}{400} \times 100 = 75\%$

S46. Ans.(b)
Sol.
Total girl students in school A = $800 \times \frac{2}{5} = 320$
Total girl students in school E = $1000 \times \frac{3}{10} = 300$
Required difference = 320 – 300 = 20

S47. Ans.(b)
Sol.
Total girl students in school B = $600 \times \frac{3}{10} = 180$
Total girl students in school D = $1200 \times \frac{7}{20} = 420$
Required average = $\frac{420+180}{2} = 300$

S48. Ans.(e)
Sol.
Total boy students in school C = $900 \times \frac{1}{2} = 450$
Total girl students in school E = $1000 \times \frac{3}{10} = 300$
Required percentage = $\frac{450-300}{300} \times 100 = 50\%$

S49. Ans.(b)
Sol.
Total students in school F = $600 \times \frac{140}{100} = 840$
Total boy students in school F = $800 \times \frac{3}{5} + 150 = 630$
So, total girl students in school F = 840 - 630 = 210

S50. Ans.(e)
Sol.
Total boy students in school C & D = $900 \times \frac{1}{2} + 1200 \times \frac{13}{20}$
= 450 + 780
= 1230
Total students in school B = 600
Required ratio = 1230 : 600 = 41 : 20

S51. Ans.(b)
Sol.
$? = \frac{37}{8} + \frac{3}{2} - \frac{8}{3}$
$? = \frac{111+36-64}{24}$
$? = \frac{83}{24}$
$? = 3\frac{11}{24}$

S52. Ans.(d)
Sol.
$7 \times ? + 37 - 45 = 13$
$7 \times ? = 13 + 8$
$7 \times ? = 21$
$? = 3$

S53. Ans.(b)
Sol.
$360 - \frac{80}{100} \times 1200 + 840 = \frac{24}{100} \times ?^3$
$1200 - 960 = \frac{24}{100} \times ?^3$
$\frac{24}{100} \times ?^3 = 240$
$?^3 = 1000$
$? = 10$

S54. Ans.(a)
Sol.
$\frac{28}{100} \times 75 + 6 \times ? = 441$
$6 \times ? = 441 - 21$
$6 \times ? = 420$
$? = 70$

S55. Ans.(a)
Sol.
$? = 3554 - 4896 + 1365$
$? = 4919 - 4896$
$? = 23$

S56. Ans.(e)
Sol.
$300 \div 0.75 = ?$
$? = 400$

S57. Ans.(c)
Sol.
$150 \times 39 \div 3 - 950 = ?$
$1950 - 950 = ?$
$? = 1000$

S58. Ans.(c)
Sol.
$288 - 55 = ?$
$? = 233$

S59. Ans.(d)
Sol.
ATQ,
Breadth of rectangular park = 7x
So, length of rectangular park = 22x
$2 \times (22x + 7x) = 2 \times \frac{22}{7} \times 203$
$2 \times 29x = 1276$
$x = 22$
So, breadth of park = 7× (22)
= 154 m

S60. Ans.(a)
Sol.
Let total capacity of tank = 60 unit (LCM of 20, 30 & 5)
Efficiency of pipe A = $\frac{60}{20}$ = 3 unit/hour
Efficiency of pipe B = $\frac{60}{30}$ = 2 unit/hour
Efficiency of pipe C = $\frac{60}{5}$ = 12 unit/hour (pipe C is empty tank)
Required time = $\frac{(3+2) \times 20}{(12)} = \frac{25}{3}$ hours

S61. Ans.(b)
Sol.
Let total work = 60 unit (LCM of 10 & 12)
Efficiency of A = $\frac{60}{10}$ = 6 unit/day
Efficiency of B = $\frac{60}{12}$ = 5 unit/day
Total work done by B in 9 days = 5 × 9 = 45 unit
Remaining work = 60 – 45 = 15 unit
Efficiency of C = $\frac{6}{2}$ = 3 units/day
Required no. of days = $\frac{15}{3}$ = 5 days

S62. Ans.(d)
Sol.
Speed of boat in upstream = 10 km/hr
Speed of boat in downstream = 15 km/hr
Speed of boat in still water = $\frac{10+15}{2}$ = 12.5 km/hr
Required total distance = 12.5 × 4 = 50 km

S63. Ans.(e)
Sol.
Let present age of B = a
So, present age of A = (a + 6)
ATQ -
(a + a + 6) + 2 × 2 = 34
2a = 34 – 10
a = 12 years
Present age of C = $(12 + 6) \times \frac{10}{9}$ = 20 years

S64. Ans.(a)
Sol.
Let Principal = Rs. x
Equivalent rate of interest of compound interest for 2 years at 10% p.a.
= $10 + 10 + \frac{10 \times 10}{100}$ = 21%
Equivalent rate of interest of simple interest for 2 years at 10% p.a.
= 10 + 10 = 20%
$\frac{x \times (21-20)}{100} = 50$
x = Rs. 5000
Required interest = $5000 \times 10 \times \frac{3}{100}$ = Rs. 1500

S65. Ans.(a)
Sol.
Let two numbers be a and b respectively, where a > b
a + b = 44 ....(i)
$\frac{50}{100} \times a = \frac{60}{100} \times b$
5a=6b..............(ii)
From equations (i) and (ii) we get
a= 24 & b = 20
So, bigger number = 24

S66. Ans.(a)
Sol.
Equivalent rate of interest of 10% p.a. at CI for 2 years = $\left(10 + 10 + \frac{10 \times 10}{100}\right)$%
= 21%
ATQ,
$\left(X \times \frac{21}{100}\right) - \left(X \times \frac{10}{100}\right) = 4400$
X = 40000 Rs.

S67. Ans.(a)
Sol.
Let the five consecutive numbers be a, a+1, a+2, a+3, a+4 respectively.
ATQ,
$\frac{a+4+a+1}{2} = 17.5$
a = 15

$\frac{a+ a+1+ a+2+ a+3+ a+4}{5} = X$
$\frac{5 \times 15+10}{5} = X$
X = 17

S68. Ans.(a)
Sol.
Length of bridge = 450 × 3 = 1350 m
Let the speed of the train be x kmph
ATQ,
$x \times \frac{5}{18} = \frac{450+1350}{36}$
x = 180 kmph

S69. Ans.(e)
Sol.
Ratio of profit share of A, B and C =
= 10000 × 12 : 12000 × 12 : 12000 × 9
= 10 : 12 : 9
∴ Profit share of C = $\frac{1200}{12} \times 9$
= Rs. 900

S70. Ans.(e)
Sol.
Let marked price of article be Rs.100x.
Selling price of article = $100x \times \frac{70}{100} = Rs. 70x$
Cost price of article = $70x \times \frac{100}{140} = Rs. 50x$
ATQ
100x − 50x = 1500
x = 30
So, selling price of article = 70x = Rs. 2100

S71. Ans.(e)
Sol.
I. $x^2 – 18x + 65 = 0$
$x^2 – 13x – 5x + 65 = 0$
x (x – 13) –5 (x – 13) = 0
(x – 13) (x – 5) = 0
x = 13, 5
II. $y^2 – 10y + 21 = 0$
$y^2 – 3y – 7y + 21 = 0$
y (y – 3) –7 (y – 3) = 0
(y – 3) (y – 7) = 0
y = 3, 7
So, *no relation.*

S72. Ans.(a)
Sol.
I. $4x^2 – 12x + 9 = 0$
$4x^2 – 6x – 6x + 9 = 0$
2x (2x – 3) –3 (2x – 3) = 0
(2x – 3) (2x – 3) = 0
$x = \frac{3}{2}, \frac{3}{2}$
II. $3y^2 – 5y + 2 = 0$
$3y^2 – 3y – 2y + 2 = 0$
3y (y – 1) –2 (y – 1) = 0
(y – 1) (3y – 2) = 0
$y = 1, \frac{2}{3}$
So, x > y

S73. Ans.(e)
Sol.
I. $(x + 4)^2 = 16$
x+4 = ±4
x= 0, -8
II. $(y + 1)^2 = 49$
y+1 = ±7
y= 6, -8
so, no relation between x and y.

S74. Ans.(b)
Sol.

I. $x^2 + 9x - 8x - 72 = 0$
$x(x + 9) - 8(x + 9) = 0$
$(x - 8)(x + 9) = 0$
$x = 8, -9$
II. $y^2 - 10y - 9y + 90 = 0$
$y(y - 10) - 9(y - 10) = 0$
$(y - 9)(y - 10) = 0$
$y = 9, 10$
so, $x < y$

S75. Ans.(b)
Sol.

I. $x^2 + 4x - 96 = 0$
$x^2 + 12x - 8x - 96 = 0$
$x(x+12) - 8(x+12) = 0$
$x = 8, -12$
II. $y^2 - 28y + 196 = 0$
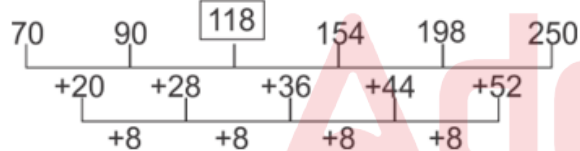$y^2 - 14y - 14y + 196 = 0$
$y(y-14) - 14(y-14) = 0$
$y = 14, 14$
So, $y > x$

S76. Ans.(d)
Sol.
Missing number = 118
Pattern of series –

S77. Ans.(c)
Sol.
Pattern of series-
9×2+1=19
19×3+1=58
58×4+1=**233**
233×5+1=1166
1166×6+1=6997

S78. Ans.(c)
Sol.
Pattern of series –
49 + 4 = 53
53 + 8 = 61
61 + 16 = 77
77 + 32 = 109
?= 109 + 64 = **173**

S79. Ans.(c)
Sol.
Pattern of series –
128× 0.5 = 64
64 × 1 = 64
64 × 1.5 = 96
96 × 2 = 192
?= 192 × 2.5 = **480**

S80. Ans.(e)
Sol.
The given pattern of the series is:
9×2-1=17
17×2-1=33
33×2-1=**65**
65×2-1=129
129×2-1=257
257×2-1=513