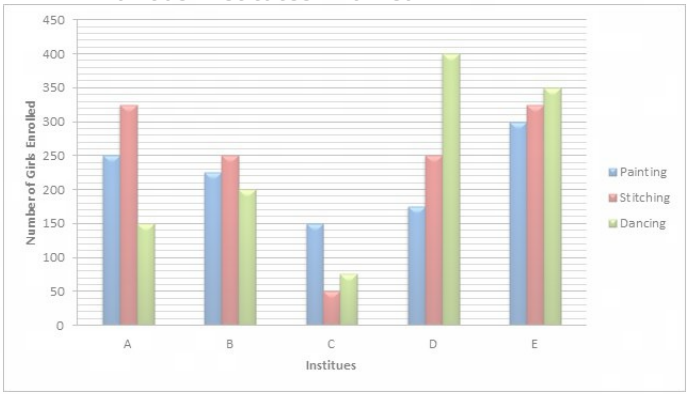
IBPS RRB Officers (Scale I) Prelims Paper 2016

Quantitative Aptitude

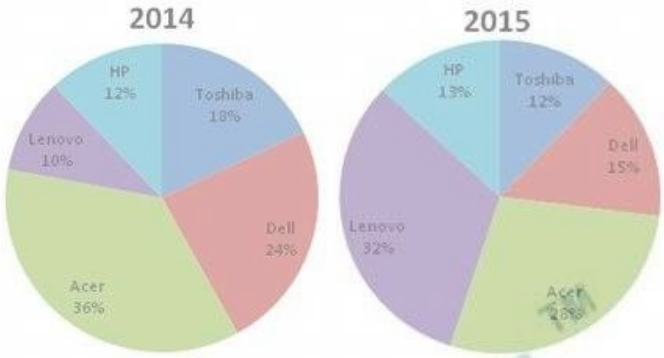
Directions (1-5): *Study the graph carefully to answer the questions that follow. Number of Girls Enrolled in Different Hobby Classes in Various Institutes in a Year*



1. What is the respective ratio of total number of girls enrolled in Painting in the Institutes A and C together to those enrolled in Stitching in the Institutes D and E together?
   A. 5 : 4 B. 5 : 7
   C. 16 : 23 D. 9 : 8
   E. None of these
2. Number of girls enrolled in Stitching in Institute B forms approximately what per cent of the total number of girls enrolled in Stitching in all the Institutes together?
   A. 29% B. 21%
   C. 33% D. 37%
   E. 45%
3. What is the respective ratio of total number of girls enrolled in Painting, Stitching and Dancing from all the Institutes together?
   A. 44 : 48 : 47 B. 43 : 47 : 48
   C. 44 : 47 : 48 D. 47 : 48 : 44
   E. None of the above
4. Number of girls enrolled in Dancing in Institute A forms what per cent of total number of girls enrolled in all the Hobby classes together in that Institute?
   (Rounded off to two digits after decimal)
   A. 23.87% B. 17.76%
   C. 31.23% D. 33.97%
   E. 20.69%
5. What is the total number of girls enrolled in Painting from all the Institutes together?
   A. 1150 B. 1200
   C. 1275 D. 1175
   E. None of these

Directions (6-10) : *Study the following pie-chart carefully and answer the questions given below*:

Percentage Sales of Different Models of Computers in Two Different Years.



Total sales in 2014 – 12500 % increase = 12.5% (for 2015)

6. The percentage decrease in the sales of Toshiba in 2015 is approximately.
   A. 25% B. 32%
   C. 22% D. 27.5%
   E. None of these
7. What is total sales of HP brand of computers in both 2014 and 2015?
   A. 3328 B. 3524
   C. 3280 D. 4256
   E. 2685
8. What is the ratio between the Dell sales in 2014 and those of Lenovo in 2015?
   A. 3:11 B. 2:5
   C. 3:7 D. 2:3
   E. 3:5
9. For which brand of computers, did the sales increase the maximum in term of absolute value between the two years?
   A. Lenovo B. HP
   C. Acer D. Toshiba
   E. None of these
10. HP's sales in 2014 is what percentage of the sales of Acer in 2015?
    A. 32% B. 48%
    C. 42% D. 38%
    E. None of these

Direction (11-15): *Following table shows the total number of students and percentage of boys among them of different branches of five engineering colleges. Answer the following question based on this table.*

	Computer Science		IT		Electronics		Telecom		Civil	
	Total	% boys	Total	% boys	Total	% boys	Total	% boys	Total	% boys
A	120	70%	70	60%	110	60%	40	55%	160	60%
B	116	50%	72	50%	100	51%	60	65%	116	50%
C	140	65%	80	65%	96	50%	36	50%	120	55%
D	90	60%	65	60%	100	57%	50	56%	150	66%
E	100	57%	60	65%	116	50%	70	60%	140	65%

11. What is the difference between number of boys in College A and number of female students in College B?
A. 75 B. 80
C. 85 D. 88
E. 95

12. What is the average number of boys studying in Electronics stream in all five colleges?
A. 45 B. 48
C. 50 D. 52
E. 56

13. The number of girls in Telecom stream of College D is what percent of its total students in Telecom stream?
A. 20% B. 42%
C. 11% D. 18%
E. 50%

14. What is the ratio of number of boys of IT stream of College C to that of College D?
A. 2 : 3 B. 3 : 5
C. 4 : 3 D. 4 : 5
E. 1 : 1

15. What is the ratio of number of boys of IT stream of College C to that of College D?
A. 2 : 3 B. 3 : 5
C. 4 : 3 D. 4 : 5
E. 1 : 1

Direction (16-20): *What will come in place of the question mark (?) in the given number series?*

16. 99, 121, 143, 165, ?
A. 187 B. 192
C. 275 D. 173
E. None of these

17. 35, 99, 195, 323, ?
A. 576 B. 385
C. 475 D. 483
E. None of these

18. 6, 20, 42, 72, ?
A. 110 B. 102
C. 105 D. 113
E. None of these

19. 2, 6, 24, 120, ?
A. 610 B. 820
C. 720 D. 725
E. None of these

20. 105, 1287, 4845, 12075, ?
A. 23610 B. 24820
C. 27240 D. 24273
E. None of these

Directions (21-25): *Solve the following quadratic equations to find out the values of p and q. After that, find out the relationship between p & q and mark your answer accordingly.*

21. I. $9p^2 - 21p + 12 = 0$
II. $18q^2 - 50q + 32 = 0$
A. p > q B. p < q
C. p ≥ q D. p ≤ q
E. p = q or no relation can be established between 'p' and 'q'.

22. I. $3p^2 - 8p - 60 = 0$
II. $20q^2 - 288q + 1036 = 0$
A. p > q B. p < q
C. p ≥ q D. p ≤ q
E. p = q or no relation can be established between 'p' and 'q'.

23. I. $5p^2 - 65p + 180 = 0$
II. $3q^2 - 90q + 483 = 0$
A. p > q B. p < q
C. p ≥ q D. p ≤ q
E. p = q or no relation can be established between 'p' and 'q'.

24. I. $11p^2 - 38p - 24 = 0$
II. $9q^2 - 1.5q - 7.5 = 0$
A. p > q B. p < q
C. p ≥ q D. p ≤ q
E. p = q or no relation can be established between 'p' and 'q'.

25. I. $18p - 10.5q = 24$
II. $27p + 1.5q = 6$
A. p > q B. p < q
C. p ≥ q D. p ≤ q
E. p = q or no relation can be established between 'p' and 'q'.

26. Direction: What should come in place of the question mark (?) in the following questions?

$13\frac{3}{4}\times 42\frac{5}{6}+?=53\frac{3}{4}$

A. $-535\frac{5}{24}$ B. $-534\frac{1}{2}$
C. $-525\frac{3}{25}$ D. $-536\frac{5}{24}$
E. None of these

27. **Directions:** What will come in place of question mark in the given questions?

$2\frac{3}{5}\div 4\frac{7}{8}\times 5\frac{5}{6}=?$

A. $3\frac{5}{8}$ B. $3\frac{1}{9}$
C. $3\frac{3}{8}$ D. $4\frac{1}{6}$
E. $1\frac{2}{9}$

28. **Direction:** What will come in place of question mark (?) in the following question?

?% of 550 – 12% of 150 = 125

A. 54 B. 44
C. 16 D. 36
E. None of these

29. What should come in place of question mark (?) in the following equation?

4% of 250 × ?% of 140 = 84

A. 12 B. 5
C. 6 D. 8
E. None of these

30. What value should come in place of question mark (?) in the following questions

$(0.027)^2\times(0.09)^2\div(0.3)^6=(0.3)^?$

A. 3 B. 2
C. 5 D. 6
E. None of these

31. Mr Phanse invests an amount of ₹24,200 at the rate of 4 p.c.p.a. for 6 years to obtain a simple interest. Later he invests the principal amount as well as the amount obtained as simple interest for another 4 years at the same rate of interest. What amount of simple interest will he obtain at the end of the last 4 years?

A. ₹4.800 B. ₹4,850.32
C. ₹4,801.28 D. ₹4,700
E. None of these

32. An article is sold at a profit of 20 %. If it had been sold at a profit of 25%, it would have fetched Rs. 45 more. The cost price of the article is

A. Rs. 650 B. 900
C. 750 D. Rs. 800
E. None of these

33. A and B can do a piece of work in 30 days while B and C can do the same work in 24 days and C and A can do it in 20 days. They all work together for 10 days, after that B and C leave, how many more days will A take to finish the remaining work?

A. 18 B. 24
C. 30 D. 36
E. None of these

34. The respective ratio between the present ages of Ram, Rohan & Vinay is 3 : 4 : 5. If the average of their present ages is 28 years then what would be the sum of the ages of Ram and Rohan together after 5 years?

A. 45 years B. 55 years
C. 52 years D. 59 years
E. None of these

35. Anil can row at a speed of 7 Km/hr in still water to a certain upstream point and back to the starting point in a river which flows at 3 km/hr. Find his average speed for total journey.

A. 40/7kmph B. 75/6 kmph
C. 3.5 kmph D. 7 kmph
E. 4.5 kmph

36. In 80 litres mixture of milk and water, water is only 25%. The milkman added 17 litres of water to the mixture. What is the approximate percentage of water in the final mixture?

A. $38\frac{1}{7}$ B. $44\frac{2}{7}$
C. $40\frac{5}{7}$ D. $45\frac{3}{7}$
E. $42\frac{6}{7}$

37. A train 150 m long is running with a speed of 20 km/hr. If a man cycling in the opposite direction of train at 5 km/hr speed. How much time taken by train to pass the man?

A. 20 sec B. 16 sec
C. 21.6 sec D. 22.3 sec
E. None of these

38. A basket contains 8 red, 4 black, 3 green flowers. If three flowers are picked at random, what is the probability that at least one is green

A. 47/91 B. 4/13
C. 13/53 D. 57/91
E. None of these

39. A started a business with an investment of Rs 16000. After 2 months B also became his partner and invested 5/8th of the amount invested by A. Again after 2 more months C entered into the partnership with Rs 8000. After 10 months, they had a profit of Rs 6336. Find the share of B in the profit.
A. Rs 1760 B. Rs 1670
C. Rs 1780 D. Rs 1680
E. None of these

40. The income of A is 150% of the income of B and the income of C is 120% of the income of A. If the total income of A, B and C together is ₹ 86000, what is C's income?
A. ₹ 30000 B. ₹ 32000
C. ₹ 20000 D. ₹ 36000
E. None of these

Reasoning Ability

41. **Directions:** In each question below are given four statements followed by four conclusions numbered 1 to 5. 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 conclusion definitely logically does not follow from the given statements, disregarding commonly known facts.
Statements:
Some money are wallets
All wallet are mobikwik
All mobikwik are paytm
No paytm is a oxigen
Conclusions:
1). No oxigen is a paytm
2). No oxigen is a mobikwik
3). All money being oxigen is a possibility
4). All wallet are paytm
5). All mobikwik are paytm
A. Only 1 does not follow
B. Only 2 does not follow
C. Only 3 does not follow
D. Only 4 does not follow
E. Only 1 and 3 does not follow

42. In each question below are given two or three statements followed by two conclusions numbered I and II. You have to take the given statement to be true even if they seem to be at variance with commonly known facts. Read all the conclusion and then decide which of the given conclusion logically follows from the given statement, disregarding commonly known facts.
Statement:
Some red are white.
No red is a pink.
All white are black.
Conclusion:
I. Some black being pink is a possibility.
II. All pink being black is a possibility.
A. Only conclusion I follows.
B. Only conclusion II follows.
C. Either conclusion I or II follows.
D. Neither conclusion I nor II follows.
E. Both conclusions I and II follow.

43. **Direction**: In each question given below three/four statements are followed by two conclusions numbered I and II. You have to take the three given statements to be true even if they seem to be at variance from the commonly known facts. Read the conclusions and decide which logically follows from the given statements disregarding commonly known facts.
Statement:
Some mountains are rivers.
All rivers are fountains.
No river is pond.
Conclusion:
I. Some fountains are definitely not ponds.
II. All ponds being fountains is a possibility.
A. Only conclusion I follows.
B. Only conclusion II follows.
C. Either conclusion I or II follows.
D. Neither conclusion I nor II follows.
E. Both conclusions I and II follow.

44. In each of the questions below are given two or three statements followed by two conclusions numbered I, II and III. 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.
Statements:
All writing are Pens
No black is a pen
Some white are writing
Conclusions:
I. All white being pens are possibilities
II. No black is a writing
III. Some writing are not pens
A. only I follows
B. only I and III follows
C. only I and II follows
D. only II follows
E. None of these

45. **Direction:** In each of the questions below are given some statements followed by three or more 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 conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts.
Statements:
No green is purple
All purple are acute.
All acute are pink
All pink are red.

Conclusion:
I. No green is a pink
II. All purple is pink
III. At least some green are pink
IV. Some pink are red.
A. Only II follows B. Only I and IV follow
C. Only II and III follows D. Only III & IV follows
E. None of these

Directions (46-50): *In these questions, a relationship between different elements is shown in the statements. The statements are followed by two conclusions.*

46. **Statements:** A=B≤ C<D≤ E≥F; G < A; E=H
Conclusions:
I. G < D
II. H > B
A. Only conclusion I True.
B. Only conclusion II True.
C. Either conclusion I or conclusion II True.
D. Neither conclusion I nor conclusion II True.
E. Both conclusions I and II True.

47. **Statements:** A=B≤C<D≤E≥F; G<A; E=H
Conclusions:
I. A>F
II. C=H
A. Only conclusion I True.
B. Only conclusion II True.
C. Either conclusion I or conclusion II True.
D. Neither conclusion I nor conclusion II True.
E. Both conclusions I and II True.

48. **Statements:** A≤B=C<D; C≤E
Conclusions:
I. E>A
II. E=A
A. Only conclusion I True.
B. Only conclusion II True.
C. Either conclusion I or conclusion II True.
D. Neither conclusion I nor conclusion II True.
E. Both conclusions I and II True.

49. **Statements:** A>B≤C<D=E>F≥G; H=E≤I
Conclusions:
I. B>F
II. C<I
A. Only conclusion I True.
B. Only conclusion II True.
C. Either conclusion I or conclusion II True.
D. Neither conclusion I nor conclusion II True.
E. Both conclusions I and II True.

50. **Statements:** A>B≤C<D=E>F≥G; H=E≤I
Conclusions:
I. H>G
II. A <E
A. Only conclusion I True.
B. Only conclusion II True.
C. Either conclusion I or conclusion II True.
D. Neither conclusion I nor conclusion II True.
E. Both conclusions I and II True.

Directions (51-55): *Study the following information carefully and answer the questions given below:*

Nine people P, Q, R, S, T, U, V, W and X stay in a building, but not necessarily in the same order. All of them belong to a different city of India viz- Mumbai, Delhi, Pune, Jaipur, Kota, Kolkata, Raipur, Ranchi and Indore. The building has nine floors and only one person stays on one floor. The ground floor is numbered 1, the floor above it is numbered 2 and so on, and the topmost floor is numbered 9. W belongs to Jaipur and stays on an even numbered floor. P stays on any even numbered floor below the floor on which W stays. The one who belongs to Raipur stays on the fourth floor. T stays on the second floor and belongs to Pune. The one who belongs to Indore stays on the third floor. P does not belong to Kota. There are two floors between the floor on which the people who belong to Kolkata and Jaipur stay. R belongs to Delhi. There are three floors between the floor on which R and V stay. S stays on a floor immediately above X's floor. There is one floor between the floors on which U and V stay. U does not belong to Indore. The one who belongs to Mumbai stays on the topmost floor. U does not stay on the ground floor.

51. Who among the following belongs to Kota?
A. P B. R
C. S D. U
E. None of these

52. Who among the following stays on topmost floor?
A. R B. S
C. T D. X
E. None of these

53. P belongs to which of the following cities?
A. Raipur B. Indore
C. Ranchi D. Mumbai
E. None of these

54. How many floors are there between the floor on which X stays and the floor on which R stays?
A. One B. Two
C. Three D. None
E. More than three

55. Which of the following is true as per the given information?
A. Q stays on a floor immediately below the floor on which W stays.
B. V stays on a floor immediately above the floor on which P stays.
C. U stays on the eighth floor.
D. S belongs to Raipur.
E. None of these

Directions (56-60): *Study the following information carefully and answer the questions given below:*

There are seven friends A, B, C, D, E, F and G, they participated in a race and they got different ranks from 1 to 7 but not necessarily in the same order. (Rank 1 being highest and Rank 7 being lowest). Now these seven friends are sitting in a row facing North. The person who secured Rank 2 sits two places to the right of C. There are three persons sitting between A and E. The one who secured Rank 4 is two places to the left of one who secured Rank 7. D and B are sitting adjacent to each other. E sits to the immediate left of the person who secured Rank 2. The one who secured Rank 6 sits exactly between the one who secured Rank 3 and Rank 5. A secured Rank 3. The one who secured Rank 7 is at one end of the row. D is not among the top 5 rankers. G is three places to the right of B.

56. What is the rank of G?
A. 7 B. 2
C. 5 D. 4
E. None of these

57. What is the position of C with respect to A?
A. Three places to the right
B. Two places to the left
C. Two places to the right
D. Immediate neighbour
E. Can't be determined

58. Who are the neighbours of C?
A. D, E B. E, G
C. A, B D. B, E
E. E, F

59. Who secured the first and the last rank respectively among the seven?
A. D, C B. E, B
C. F, G D. F, B
E. C, F

60. Who sits at the extreme ends of the rows?
A. A, G B. F, G
C. A, F D. B, F
E. B, G

Direction (61-65): *Study the following information and answer the given questions.*
A, B, C, D, E, F, G and H are sitting around a square table in such a way that four of them sit at four corners of the square while four sit in the middle of each four side. The ones who sit at the corners face the centre while those who sit at the middle of the sides face outside. Also, 4 of them are male and the other 4 are female. Two females sit in the middle of the sides and two at the corners. A sits second to the left of G. G sits in the middle of one of the sides. C sits fourth to the right of his wife and his wife is not an immediate neighbour of A or G. B sits third to the right of her husband. B does not sit at any of the corners. Only D sits between B and H. H is the husband of A. E is a male.

61. Which of the following is true with respect to the given seating arrangement?
A. No two males are immediate neighbours of each other
B. G and H do not face each other in the given arrangement.
C. E and D are immediate neighbours of each other.
D. F is a male and sits diagonally opposite to E
E. A sits in the centre of one of the sides of the square table.

62. Who amongst the following is B's husband?
A. C B. G
C. E D. F
E. Cannot be determined

63. How many people sit between B and C when counted in anti-clockwise direction from B?
A. None B. One
C. Two D. Three
E. Four

64. Who amongst the following is the wife of C?
A. D B. F
C. B D. G
E. Cannot be determined

65. What is the position of E with respect to C?
A. Immediately to the left
B. Second to the left
C. Third to the right
D. Immediately to the right
E. Second to the right

Directions (66-68): *Study the following information and answer the questions.*

There are eight people in a family viz. M, K, A, C, D, E, G and H consists of 3 generations. (Note- order is not necessarily same) Four of them are female. D and A are daughter and son of K respectively and both are married. E is sister of H whose father is C. M and G are of 3rd generation and M is son-in-law of E. K is brother-in-law of H.

66. Who among the following is sister-in-law of D?
A. H B. A
C. M D. G
E. C

67. If Q is child of D then how A is related to that child?
A. Paternal uncle B. Maternal uncle
C. Father D. Cannot be determined
E. Grandfather

68. How is H related to D?
A. Sister B. Mother
C. Grandmother D. Sister-in-law
E. Aunt

Direction (69-71): *Study the following information carefully to answer the given question:*
Rahul starts to walk for 5m to his east from point A then he takes a right turn and walks for 10m then again, he takes a right turn and walks for 3m then he takes a left turn and walks for 7m and reached to point B. Manish starts walks for 7m to his south from point C then he takes a left turn and walks for 4m and reached to point B.

69. If point D is 2m to the west of B then what is the distance between A and D?
A. 15m B. 17m
C. 22m D. 14m
E. None of these

70. In which of the following direction is point C with the respect to point A?
A. South-east B. North-west
C. South-west D. South
E. North

71. If point E is 17m to the north of point B then in what is the position and direction of point of E with respect to point A?
A. West, 2m B. East, 2m
C. West, 3m D. East, 3m
E. East, 4m

Directions (72-76): *Study the following arrangement carefully and answer the questions given below:*
L 5 $ 9 N * S E # Q β U 6 % @ F © V & 8 A Z 7 K 4 W M 3 C 2

72. Four of the following five are alike in a certain way based on their positions in the above arrangement and so form a group. Which is the one that does not belong to that group?
A. %F@ B. 74K
C. 59$ D. # βQ
E. 87Z

73. How many such letters are there in the above arrangement, each of which is immediately preceded by a symbol and also followed by a symbol?
A. None B. One
C. Two D. Three
E. More than three

74. How many such numbers are there in the above arrangement, each of which is immediately preceded by a vowel and immediately followed by a number?
A. None B. One
C. Two D. Three
E. More than three

75. Which of the following is the fifth to the left of the sixteenth from the left end of the above arrangement?
A. A B. 8
C. U D. β
E. None of these

76. If all the numbers are dropped from the above arrangement, which of the following will be the seventh from the right end of the above arrangement?
A. A B. &
C. V D. #
E. Q

Direction (77-78): *Following questions are based on the five three-lettered words given below:*
SHE AND TWO WIT GUM
(**Note:** The words formed after performing the given operations may or may or may not be meaningful English words.)

77. If all the letters in each of the words are arranged in alphabetical order (within the word), how many words will remain unchanged?
A. One B. Two
C. Three D. More than three
E. None

78. According to the English alphabetical series, how many letters are there between the first letter of the second word and the first letter of the fifth word?
A. Two B. One
C. None D. Three
E. More than three

79. In a row of forty-five girls facing South, D is sixteenth from the right end. There are 8 girls between D and B. What is B's position from the left end of the row?
A. Twenty-first B. Ninth
C. Twentieth D. Data Inadequate
E. None of these

80. How many such pairs of letters are there in the word ENGLISH each of which has as many letters between them in the word (in both forward and backward directions) as in English Alphabet?
A. None B. One
C. Two D. Three
E. More than three

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Solutions

1. Ans. C

Total number of girls enrolled in Painting in Institutes A and C together= 250+150=400
Total number of girls enrolled in Stitching in Institutes D and E together= 250+325=575
∴ Required ratio= 400: 575 = 16 : 23

2. Ans. B

Total number of girls enrolled in Stitching in all the institutes together

$$= 325 + 250 + 50 + 250 + 325 = 1200$$

Number of girls enrolled in Stitching in Institute B =250
∴ Required percentage

$$= \frac{250}{1200} \times 100 = 20.8 \approx 21\%$$

3. Ans. A

Number of girls from all institutes enrolled in Painting=250+225+150+175+300=1100
Number of girls from all institutes enrolled in Stitching =1200
Number of girls from all institutes enrolled in Dancing=150+200+75+400+350=1175
∴ Required ratio= 1100: 1200: 1175 =44: 48: 47

4. Ans. E

Total number of girls in Institute
A= 250+325+150 = 725
Number of girls enrolled in Dancing in Institute
A =150
Hence, required percentage

$$= \frac{150}{725} \times 100 = 20.69\%$$

5. Ans. E

Total number of girls in Painting= 1100

6. Ans. A

Toshiba sales in 2014 = 18% of 12500 = 2250
In 2015 sales increased by 12.5% = 14062.5
Toshiba sales = 12% of 14062.5 = 1687.5
% change in sales = (2250-1687.5)/2250*100 = 25%

7. Ans. A

Total HP sales in 2014 = (12500*12)/100 = 1500
Total HP sales in 2015 = (14062.5*13)/100 = 1828
Total HP sales in both 2014 and 2015 = (1500+1828) = 3328

8. Ans. D

Total Dell sales in 2014 = (12500*24)/100 = 3000
Total sales in 2015= (12500+ 12500*12.5/100) = 14062.5
Total Lenovo sales in 2015= (14062.5*32)/100 = 4500
Required ratio = 3000/4500 = 2:3

9. Ans. A

Lenovo has maximum increase in sales from 10% to 32%.

10. Ans. D

Total HP's sales in 2014 = (12500*12)/100 = 1500
Total Acer's sales in 2015 = (14062.5*28)/100 = 3937.5
Required percentage = (1500*100)/3937.5 = 38%

11. Ans. D

Total Boys in College A = 310
Total Girls in College B = 222
Difference = 310 – 222 = 88

12. Ans. E

Average number of Boys = [(110*60%)+(100*51%)+(96*50%)+(100*57%)+(116*50%)]/5 = 280/5= 56

13. Ans. C

Required Percent = (28/256) *100 = 10.93% = 11% (approximately)

14. Ans. C

Required Ratio = 52 : 39 = 4 : 3

15. Ans. C

Required Ratio = 52 : 39 = 4 : 3

16. Ans. A

The pattern is
9*11 = 99, 11*11 = 121, 13*11 = 143, 15*11 = 165, 17*11 = 187

17. Ans. D

The pattern is
5*7 = 35, 9*11 = 99, 13*15 = 195, 17*19 = 323, 21*23 = 483

18. Ans. A

The pattern is
3^2-3 = 6, 5^2-5 = 20, 7^2-7 = 42, 9^2-9 = 72, 11^2-11 = 110

19. Ans. C
The pattern is
1*2 = 2
1*2*3 = 6
1*2*3*4 = 24
1*2*4*5 = 120
1*2*3*4*5*6 = 720

20. Ans. D
3*5*7 = 105
9*11*13 = 1287
15*17*19 = 4845
21*23*25 = 12075
27*29*31 = 24273

21. Ans. E
No relation can be established between p & q.

$$I.\ 9p^2-(9+12)p+12=0$$

$$9p^2-9p-12p+12=0$$

$$9p(p-1)-12(p-1)=0$$

$$(9p-12)(p-1)=0$$

$$\therefore p=\frac{4}{3},1$$

$$II.\ 18q^2-50q+32=0$$

$$9q^2-25q+16=0$$

$$9q^2-9q-16q+16=0$$

9q(q - 1) - 16(q - 1) = 0
(q - 1)(9q - 16) = 0

$$\therefore q=\frac{16}{9},1$$

We cannot determine the exact relation.
since in case : p=4/3 and q=1 then p>q
but if : p=1 and q=16/9 ., then q>p

22. Ans. B
p < q
I. $3P^2$ – (18 - 10) p - 60=0
$3p^2$ – 18p + 10p – 60 = 0
3p(p - 6) + 10(p - 6)=0
(p - 6) (3p + 10)=0

$$\therefore p=6,-\frac{10}{3}$$

II. $20q^2$ – 288q + 1036 = 0
$5q^2$ – 72q + 259 = 0
$5q^2$ – 35q - 37q + 259 = 0
5q(q - 7) - 37(q-7)=0
(q - 7) (5q-37)=0

$$\therefore q=7,\frac{37}{5}$$

23. Ans. E
Relationship can't be established
I. p^2 – 13p + 36 = 0
p^2 – 9p-4p + 36 = 0
p(p-9) - 4(p-9) =0
(p - 4)(p - 9)=0
∴ p = 4,9
II. $3q^2$ – 90q + 483 = 0
q^2 – 30q + 161 = 0
q^2 – 23q-7q + 161 = 0
q(q-23) - 7(q-23) =0
(q - 23) (q - 7) =0
q = 23,7

24. Ans. E
Relationship can't be established
I. $11p^2$ – 44p + 6 p - 24 = 0
11p (p - 4) + 6(p - 4) = 0
(p - 4) (11p + 6)=0

$$\therefore p = 4,-\frac{6}{11}$$

II. $90q^2$ – 15q – 75 = 0
$6q^2$ – q -5 = 0
$6q^2$ – 6q+5q -5 = 0
6q(q-1) +5(q-1)=0
(q-1)(6q+5)=0
∴ q= 1, -5/6

25. Ans. A
p > q
From both, we get

$$P=\frac{22}{69}\ and\ Q=-\frac{40}{23}$$

26. Ans. A

$$13\frac{3}{4}\times 42\frac{5}{6}+?=53\frac{3}{4}$$

$$=>\frac{55}{4}\times\frac{257}{6}+?=\frac{215}{4}$$

$$=>-(\frac{14135}{24}-\frac{215}{4})=?$$

$$=>?=-\frac{12845}{24}=-535\frac{5}{24}$$

27. Ans. B

$$?=2\frac{3}{5}\div4\frac{7}{8}\times5\frac{5}{6}$$

$$=\frac{13}{5}\times\frac{8}{39}\times\frac{35}{6}$$

$$=\frac{28}{9}$$

$$=3\frac{1}{9}$$

28. Ans. E

x% of 550 – 12% of 150 = 125

$$\frac{550\times x}{100}-\frac{150\times12}{100}=125$$

$$\frac{550\times x}{100}-18=125$$

$$\frac{550\times x}{100}=125+18=143$$

$$x=\frac{143\times100}{550}=26$$

29. Ans. C

4% of 250 ×? % of 140 = 84

$$\frac{4}{100}\times250\times\frac{?}{100}\times140=84$$

$$\frac{1000}{100}\times\frac{?}{100}\times140=84$$

$$?=\frac{84}{14}$$

$$\therefore\ ?=6$$

30. Ans. E

$$\because\ (0.3)^{?}=(0.027)^{2}\times(0.09)^{2}\div(0.03)^{6}$$

$$(0.3)^{?}=(0.3)^{6}\times(0.3)^{4}\div(0.3)^{6}$$

$$(0.3)^{?}=(0.3)^{6+4-6}$$

$$\therefore\ ?=6+4-6$$

$$?=4$$

31. Ans. C

Case – I :

$$\text{SI}=\frac{\text{P}\times\text{R}\times\text{T}}{100}=\text{Rs}\left(\frac{24200\times4\times6}{110}\right)=\text{Rs }5808$$

Amount = Principal + SI = Rs (24200 + 5808)

= Rs 30008

Case – II :

$$\text{SI}=\text{Rs}\left(\frac{30008\times4\times4}{100}\right)=\text{Rs }4801.28$$

32. Ans. B

Let CP = x

Acc. to question,

$$\Rightarrow \frac{x\times125}{100}-\frac{x\times120}{100}=45$$

=> x = 900

Required CP = Rs. 900

33. Ans. A

2 (A + B + C)'s 1-day work = 1/30 + 1/24 + 1/20 = 1/8

A + B + C's 1 day work = 1/16

Work done by A, B and C in 10 days = 10/16 = 5/8

Remaining work = 1 – 5/8 = 3/8

A's one day work = 1/16 – 1/24 = 1/48

1/48 work is done by A in 1 day

So 3/8 work will be done in 48 * (3/8) = 18 days

34. Ans. D

Let the present ages of Ram, Rohan and Vinay be 3x, 4x and 5x years respectively.

Now, (3x + 4x + 5x)/3 = 28 →12x = 84→x = 84/12 = 7

So, required Sum = (3x + 4x + (5 + 5) years

= (7x+ 10) years

= (7 ×7 + 10) years

= 59 years

35. Ans. A

$$\text{Average speed}=\frac{\textit{total distance}}{\textit{total time}}$$

Let the distance = x km

$$\text{Average speed}=\frac{2x}{\frac{x}{(7+3)}+\frac{x}{(7-3)}}=\frac{40}{7}$$

36. Ans. A

$$\text{Water in the mixture}=80\times\frac{1}{4}=20\text{ litres}$$

Milk in the mixture = 80 – 20 = 60 litres

Now, 17 litres of water is added to the mixture Then, required percentage of water in the final mixture

$$=\frac{20+17}{80+17}\times100=\frac{3700}{97}=38\frac{14}{97}\approx38\frac{1}{7}\%$$

37. Ans. C
In opposite direction speed value is added that will be 20 + 5 = 25 km/hr

When it changes to m/sec then $\frac{25\times5}{18} = \frac{125}{18}$ m/sec

Time taken by train $\frac{150\times18}{125} = \frac{108}{5} = 21.6$ sec

38. Ans. A

Required Probability $= 1 - \frac{12C_3}{15C_3} = 1 - \frac{44}{91} = \frac{47}{91}$

39. Ans. A
Capital of A is employed in business for 10 months = Rs 16000
Capital of B is employed for 8 months = 5/8 × 16000 = Rs 10000
Capital of C is employed for 6 months = Rs 8000
Thus the ratio of distribution of profit = A : B : C
= 16000 × 10 : 10000 × 8 : 8000 × 6 = 160:80:48
= 10:5:3
Therefore the share of B = 5/18 × 6336 = Rs 1760

Hence Option A is correct

40. Ans. D
Suppose, Income of B = ₹ x

Income of A = $\frac{150}{100}\times x$ = ₹ $\frac{3x}{2}$

Income of C = $\frac{120}{100}\times\frac{3x}{2}$

= $\frac{6}{5}\times\frac{3x}{2}$ = ₹ $\frac{9x}{5}$

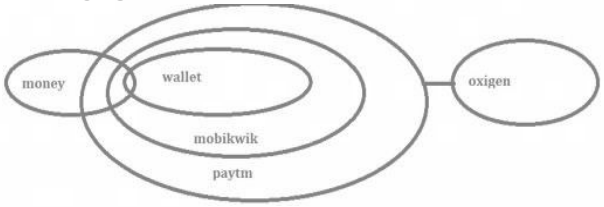
$\therefore x+\frac{3x}{2}+\frac{9x}{5}=86000$

$\frac{10x+15x+18x}{10}=86000$

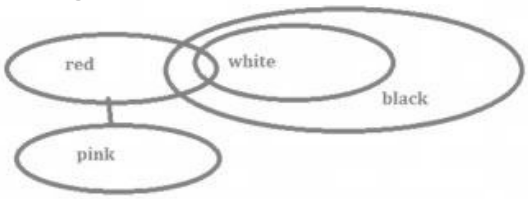
43x = 860000
x = 20000

So, income of C = $\frac{9}{5}\times20000$ = ₹ 36000

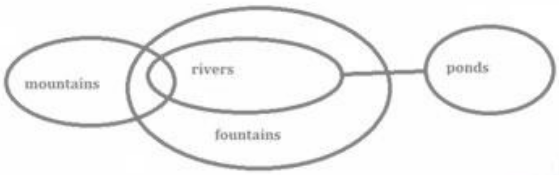
41. Ans. C



42. Ans. E

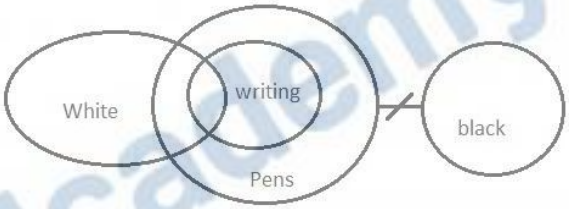


43. Ans. E



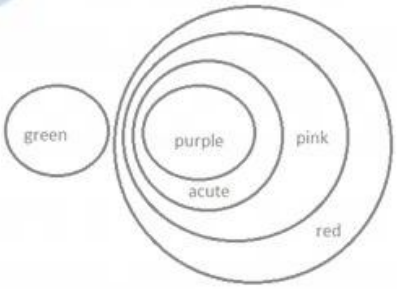
Some fountains that are rivers are definitely not ponds. So, conclusion I follows. And All ponds being fountains is a possibility also follows.

44. Ans. C



only I and II follows

45. Ans. E



Conclusion II & IV follow.

46. Ans. E
G<A=B≤C<D
I. G < D (True)
B < E = H
II. H > B (True)

47. Ans. D
A=B≤C<D≤E≥F
Relation can't be established between A&F.
I. A>F (false)
C<D≤E=H
II. C = H (False)

48. Ans. C
A≤B=C≤E
A ≤E
I. E >A
II. E=A

49. Ans. B
B≤C<D=E>F
Relation can't be established between B&F.
I. B>F (false)
C<D=E≤I
II. C<I (True)

50. Ans. A
H = E>F≥G
I. H>G (True)
A>B≤C<D=E
Relation can't be established between H&G.
II. A <E (false)

51. Ans. D
U belongs to the Kota

Floor	Person	City
9	Q	Mumbai
8	W	Jaipur
7	U	Kota
6	P	Ranchi
5	V	Kolkata
4	S	Raipur
3	X	Indore
2	T	Pune
1	R	Delhi

52. Ans. E
None of them stays on the topmost floor

Floor	Person	City
9	Q	Mumbai
8	W	Jaipur
7	U	Kota
6	P	Ranchi
5	V	Kolkata
4	S	Raipur
3	X	Indore
2	T	Pune
1	R	Delhi

53. Ans. C
P belongs to the Ranchi

Floor	Person	City
9	Q	Mumbai
8	W	Jaipur
7	U	Kota
6	P	Ranchi
5	V	Kolkata
4	S	Raipur
3	X	Indore
2	T	Pune
1	R	Delhi

54. Ans. A
Only one floors are there between the floor on which X stays and the floor on which R stays

Floor	Person	City
9	Q	Mumbai
8	W	Jaipur
7	U	Kota
6	P	Ranchi
5	V	Kolkata
4	S	Raipur
3	X	Indore
2	T	Pune
1	R	Delhi

55. Ans. D
S belongs to the Raipur

Floor	Person	City
9	Q	Mumbai
8	W	Jaipur
7	U	Kota
6	P	Ranchi
5	V	Kolkata
4	S	Raipur
3	X	Indore
2	T	Pune
1	R	Delhi

56. Ans. B

A	D	B	C	E	G	F
3	6	5	1	4	2	7

57. Ans. A

A	D	B	C	E	G	F
3	6	5	1	4	2	7

58. Ans. D

A	D	B	C	E	G	F
3	6	5	1	4	2	7

59. Ans. E

A	D	B	C	E	G	F
3	6	5	1	4	2	7

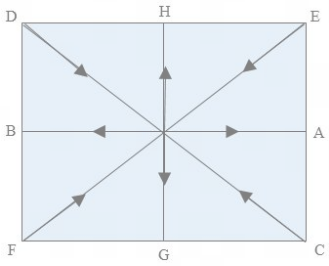
60. Ans. C

A	D	B	C	E	G	F
3	6	5	1	4	2	7

61. Ans. E

Person	Gender
A	Female
B	Female
C	Male
D	Female
E	Male
F	Female
G	Male
H	Male

C is the husband of D
H is the husband of A
E is the husband of B

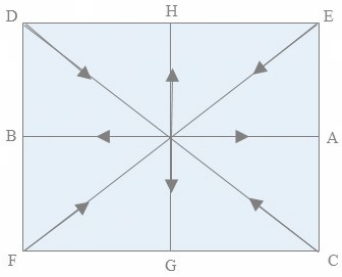


A sits in the centre of one of the sides of the square table.

62. Ans. C

Person	Gender
A	Female
B	Female
C	Male
D	Female
E	Male
F	Female
G	Male
H	Male

C is the husband of D
H is the husband of A
E is the husband of B

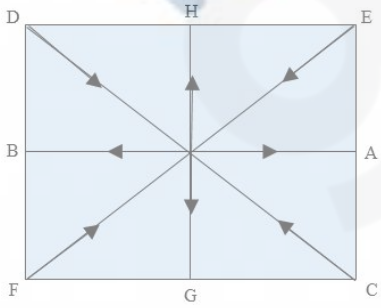


E is the husband of B

63. Ans. C

Person	Gender
A	Female
B	Female
C	Male
D	Female
E	Male
F	Female
G	Male
H	Male

C is the husband of D
H is the husband of A
E is the husband of B

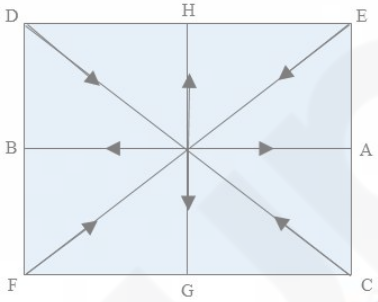


Two people sit between B and C when counted in anti-clockwise direction from B.

64. Ans. A

Person	Gender
A	Female
B	Female
C	Male
D	Female
E	Male
F	Female
G	Male
H	Male

C is the husband of D
H is the husband of A
E is the husband of B

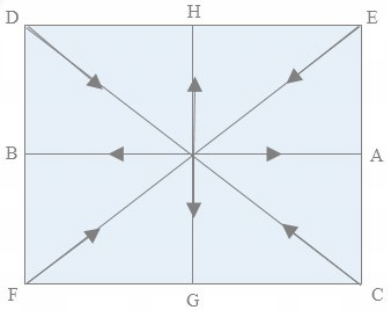


D is the wife of C.

65. Ans. E

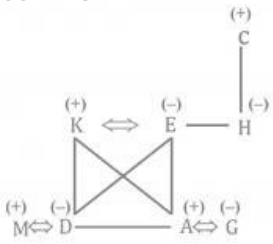
Person	Gender
A	Female
B	Female
C	Male
D	Female
E	Male
F	Female
G	Male
H	Male

C is the husband of D
H is the husband of A
E is the husband of B

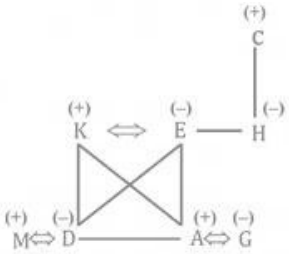


The position of E with respect to C is Second to the right.

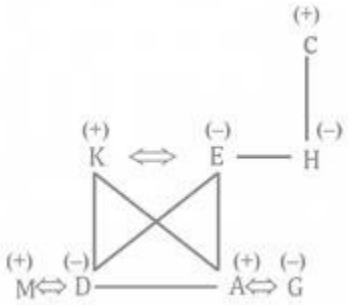
66. Ans. D



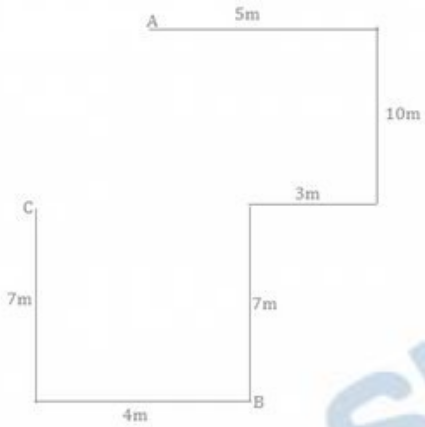
67. Ans. B



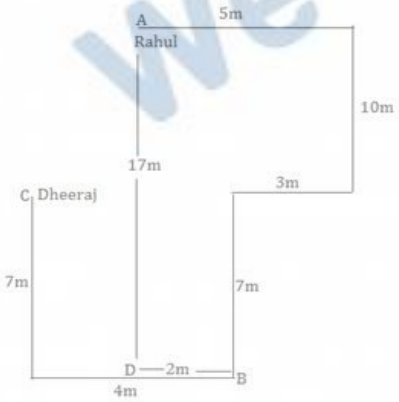
68. Ans. E



69. Ans. B

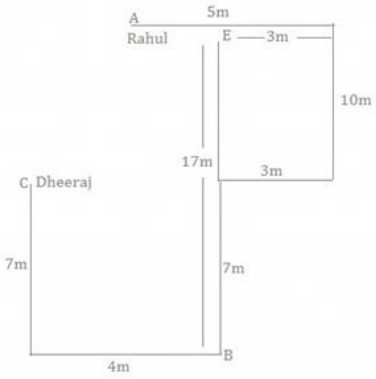


70. Ans. C



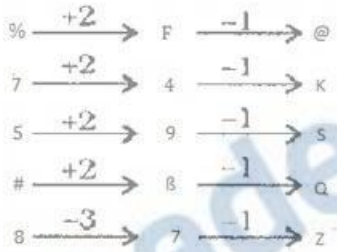
Point C is in south-west of point A.

71. Ans. B



E is 2m east of A.

72. Ans. E



73. Ans. D

Symbol	Letter	Symbol

Such combinations are :

#Qß	@F©	©V&

74. Ans. A
Vowel: Number : Number
There is no such combination.

75. Ans. D
5th to the left 16th from the left end means 11th from the left end i.e. β

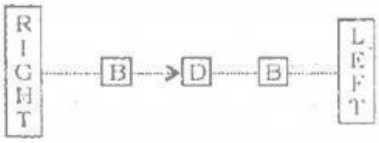
76. Ans. B

77. Ans. E
SHE ⇒ EHS
AND ⇒ ADN
TWO ⇒ OTW
WIT ⇒ ITW
GUM ⇒ GMU
Therefore, no one word will remain same after arranging in alphabetical order.
Hence, option E is correct.

78. Ans. E
Second word - AND
Fifth word - GUM

Therefore,
There are 5 letters between the first letter of the second word and the first letter of the fifth word.
Hence, option E is correct.

79. Ans. D
Girls are facing south.



It is not clear B is to the left or right of D.
Hence Option D is correct

80. Ans. E
There are four such pairs of word i.e. EG, EI, GI and LN.

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