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. $p^2 - 13p + 36 = 0$

$p^2 - 9p-4p + 36 = 0$

$p(p-9) - 4(p-9) =0$

$(p - 4)(p - 9)=0$

$\therefore p = 4,9$

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. $90q^2 - 15q - 75 = 0$

$6q^2 - q -5 = 0$

$6q^2 - 6q+5q -5 = 0$

$6q(q-1) +5(q-1)=0$

$(q-1)(6q+5)=0$

$\therefore q= 1, -5/6$

25. Ans. A

p > q

From both, we get

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

26. Ans. A

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

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

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

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

2

27. Ans. B

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

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

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

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

28. Ans. E

x% of 550 – 12% of 150 = 125

$$\frac{550 \times x}{100} - \frac{150 \times 12}{100} = 125$$

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

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

$$x = \frac{143 \times 100}{550} = 26$$

29. Ans. C

4% of 250 ×? % of 140 = 84

$$\frac{4}{100} \times 250 \times \frac{?}{100} \times 140 = 84$$

$$\frac{1000}{100} \times \frac{?}{100} \times 140 = 84$$

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

$$\therefore ? = 6$$

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 :

$$SI = \frac{P \times R \times T}{100} = Rs\left(\frac{24200 \times 4 \times 6}{110}\right) = Rs\ 5808$$

Amount = Principal + SI = Rs (24200 + 5808)
= Rs 30008

Case – II :

$$SI = Rs\left(\frac{30008 \times 4 \times 4}{100}\right) = Rs\ 4801.28$$

32. Ans. B

Let CP = x
Acc. to question,

$$=> \frac{x \times 125}{100} - \frac{x \times 120}{100} = 45$$

=> 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

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

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

$$= \frac{20 + 17}{80 + 17} \times 100 = \frac{3700}{97} = 38\frac{14}{97} \approx 38\frac{1}{7}\%$$

3

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 $\frac{25 \times 5}{18} = \frac{125}{18}$ m/sec

Time taken by train $\frac{150 \times 18}{125} = \frac{108}{5} = 21.6$ 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 = $\frac{120}{100} \times \frac{3x}{2}$

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

$\therefore x + \frac{3x}{2} + \frac{9x}{5} = 86000$
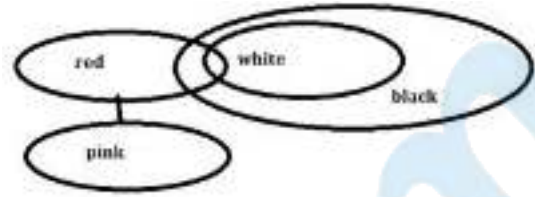
$\frac{10x + 15x + 18x}{10} = 86000$

43x = 860000
x = 20000
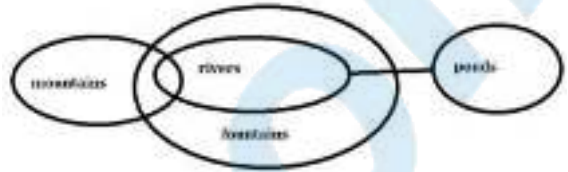
So, income of C = $\frac{9}{5} \times 20000 = ₹ 36000$
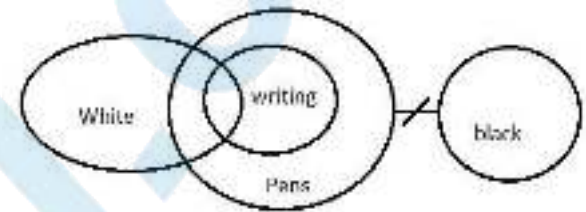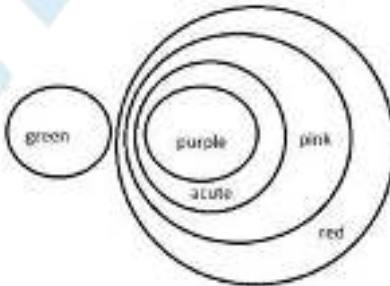
41. Ans. C

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)

4

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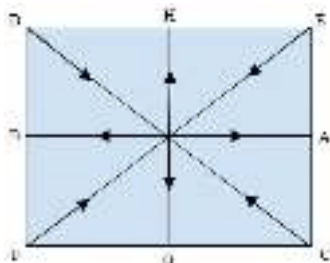
A sits in the centre of one of the sides of the square table.

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
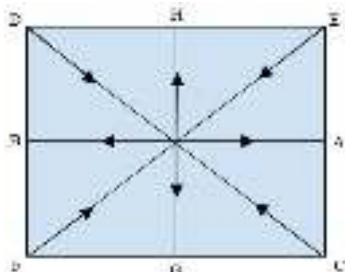
E is the husband of B

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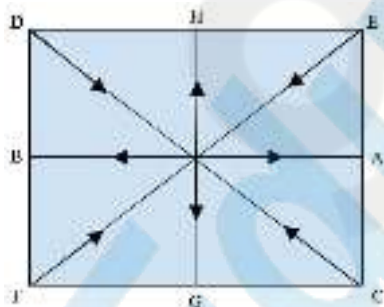
Two people sit between B and C when counted in anti-clockwise direction from B.

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
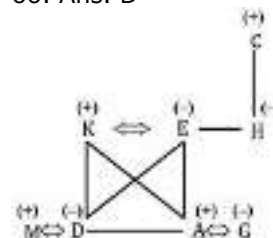E is the husband of B
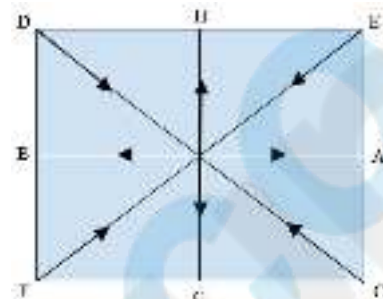
D is the wife of C.

65. Ans. E

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

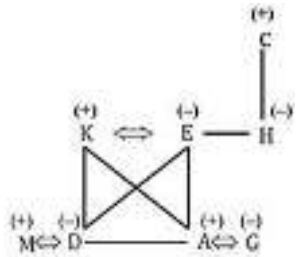C is the husband of D
H is the husband of A
E is the husband of B
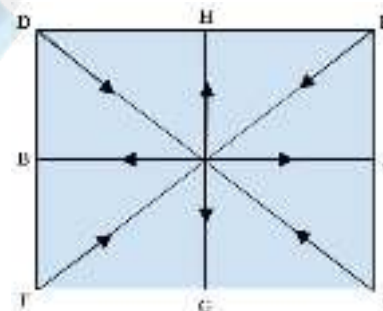
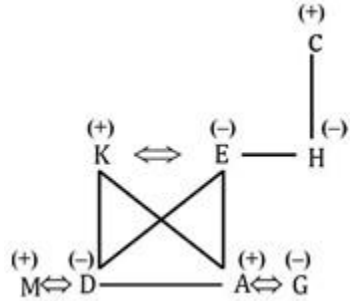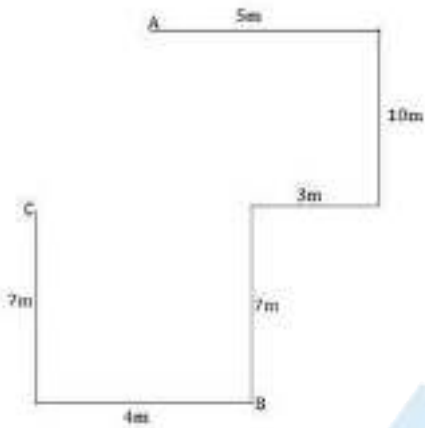The position of E with respect to C is Second to the right.
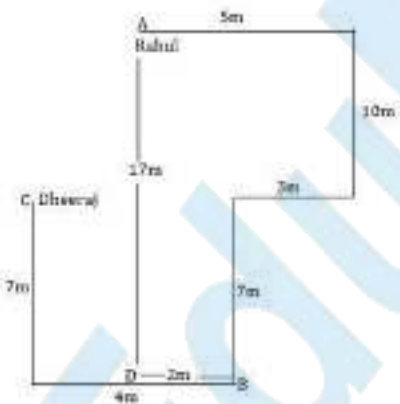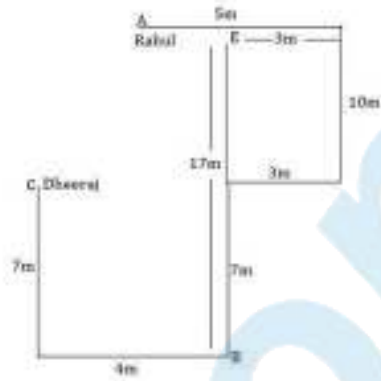
66. Ans. D

67. Ans. B

68. Ans. E

69. Ans. B

70. Ans. C

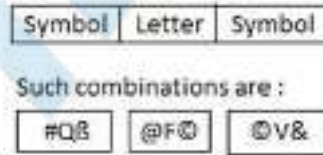Point C is in south-west of point A.

71. Ans. B

E is 2m east of A.

72. Ans. E

73. Ans. D

| Symbol | Letter | Symbol |

Such combinations are :

| #Qß | @F© | ©V& |
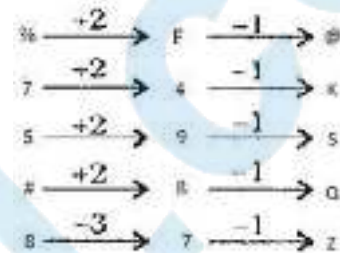
74. Ans. A
Vowel: Number : Number
There is no such combination.

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

76. Ans. B
L S N * S E # Q ß U % @ F © V & A Z K W M G

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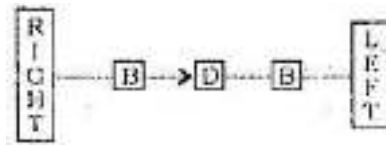Therefore, no one word will remain same after arranging in alphabetical order.
Hence, option E is correct.

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

A| B C D E F |G

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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