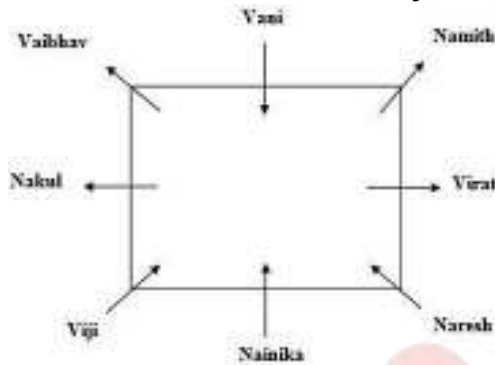


Solutions

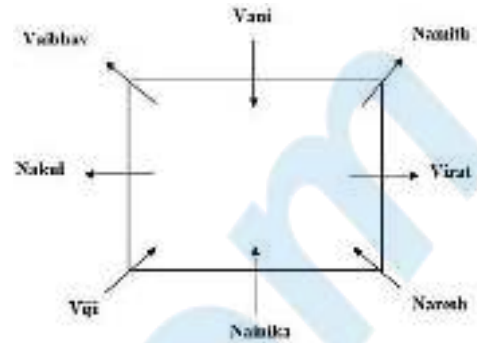
1. Ans. A.

- Only one person sits between Namith and Vaibhav and both are facing same directions.
- Namith sits fourth to the right of Viji, who doesn't sit in middle of the table.
- Vaibhav sits fourth to right of Naresh.
- Vani is sitting immediate right of Vaibhav.
- Nakul is to the immediate left of Vaibhav.
- Virat faces opposite direction of Vani and sits second to the left of Vani.
- Vani sits adjacent to Namith, who faces opposite direction of Vani.
- Viji is not a neighbour of Naresh and faces towards the centre.
- Nakul is sitting second to left of Nainika, who faces same direction as Viji.



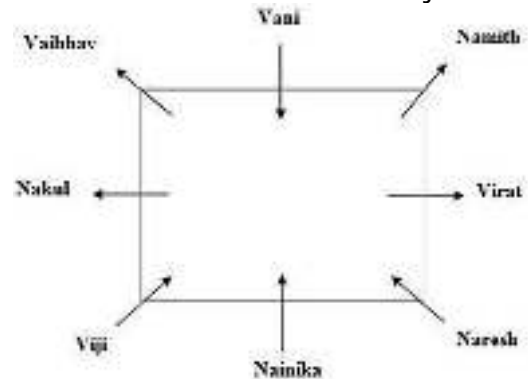
2. Ans. B.

- Only one person sits between Namith and Vaibhav and both are facing same directions.
- Namith sits fourth to the right of Viji, who doesn't sit in middle of the table.
- Vaibhav sits fourth to right of Naresh.
- Vani is sitting immediate right of Vaibhav.
- Nakul is to the immediate left of Vaibhav.
- Virat faces opposite direction of Vani and sits second to the left of Vani.
- Vani sits adjacent to Namith, who faces opposite direction of Vani.
- Viji is not a neighbour of Naresh and faces towards the centre.
- Nakul is sitting second to left of Nainika, who faces same direction as Viji.



3. Ans. C.

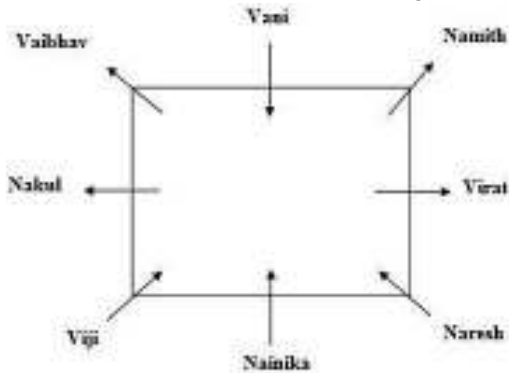
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4. Ans. E.

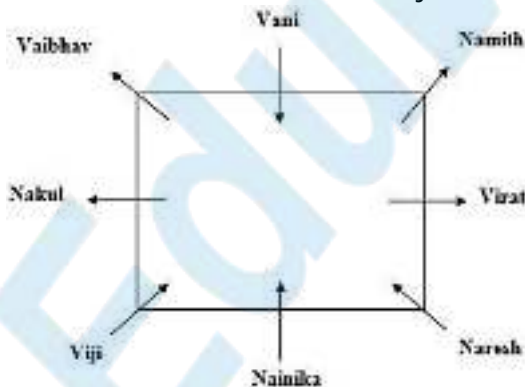
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- Vani is sitting immediate right of Vaibhav.
- Nakul is to the immediate left of Vaibhav.

- Virat faces opposite direction of Vani and sits second to the left of Vani.
- Vani sits adjacent to Namith, who faces opposite direction of Vani.
- Viji is not a neighbour of Naresh and faces towards the centre.
- Nakul is sitting second to left of Nainika, who faces same direction as Viji.



5. Ans. E.

- Only one person sits between Namith and Vaibhav and both are facing same directions.
- Namith sits fourth to the right of Viji, who doesn't sit in middle of the table.
- Vaibhav sits fourth to right of Naresh.
- Vani is sitting immediate right of Vaibhav.
- Nakul is to the immediate left of Vaibhav.
- Virat faces opposite direction of Vani and sits second to the left of Vani.
- Vani sits adjacent to Namith, who faces opposite direction of Vani.
- Viji is not a neighbour of Naresh and faces towards the centre.
- Nakul is sitting second to left of Nainika, who faces same direction as Viji.



6. Ans. E.

Statement: $T < P \leq U$; $L > U \leq K$; $P \geq R$

Conclusions:

$K \geq U \geq P \geq R$

I. $K \geq R \Rightarrow \text{True}$

$L > U \geq P \geq R$

II. $L > R \Rightarrow \text{True}$

Both Follows

7. Ans. C.

Statement: $H = I \leq R$; $M \geq R < S$

Conclusions: I. $M = I$ II. $M > I$

On combining Statement we get: $H = I \leq R \leq M < S$

From the statement we can say $I \leq M$ true and I

8. Ans. B.

Statement: $D > H \geq N$; $S > I \leq H$

Conclusions: I. $N \leq S$ II. $N < D$

On combining Statement we get: $S > D > H \geq N \geq I$ or $D > S > H \geq I \geq N \dots 1)$

For conclusion I: So from 1) $N \leq S$ does not hold true

For conclusion II: So from 2) $N < D$ hold true. So II conclusion true

9. Ans. B.

Statement: $P \leq O < I$; $P > Y > W$

Conclusions: I. $Y \leq I$ II. $O > W$

On combining Statement we get: W

For conclusion I: So from 1) $Y \leq I$ does not hold true

For conclusion II: So from 2) $W < O$ hold true. So II conclusion true

10. Ans. A.

Statement: $A \geq B > C \geq F$; $Z < C \leq D < E$

Conclusions: I. $A > Z$ II. $F > E$

On combining Statement we get: $A \geq B > E > D \geq C \geq F > Z \dots 1)$

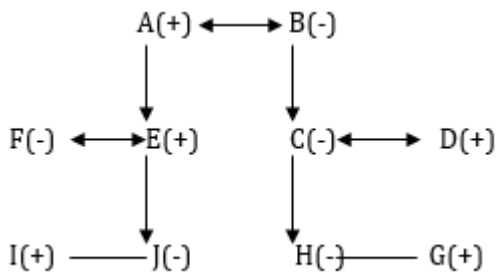
For conclusion I: So from 1) $A > Z$ hold true

For conclusion II: So from 2) $F > E$ does not hold true. So I conclusion true

11. Ans. C.

Since each couple has a son and a daughter and there are three couples in a three generation family A must be first generation and must be married to B. D, E must be 2nd generation. C is B's daughter and H is E's niece. Also, J is B's granddaughter. It means J is E's daughter. As D is J's uncle which means D and E are not married. I and G must be males of 3rd generation. If F is I's mother then F must be married to either D or E. If F is married to

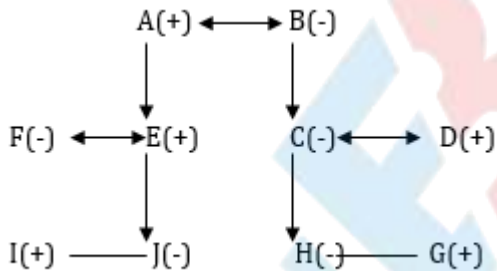
D then G must be the son of F which is not possible. Therefore F is married to E and D is married to N. D and C have children as H and J. E and F have children as H and I.
Family Tree:



F is mother of J.

12. Ans. B.

Since each couple has a son and a daughter and there are three couples in a three generation family A must be first generation and must be married to B. D, E must be 2nd generation. C is B's daughter and H is E's niece. Also, J is B's granddaughter. It means J is E's daughter. As D is J's uncle which means D and E are not married. I and G must be males of 3rd generation. If F is I's mother then F must be married to either D or E. If F is married to D then G must be the son of F which is not possible. Therefore F is married to E and D is married to N. D and C have children as H and J. E and F have children as H and I.
Family Tree:

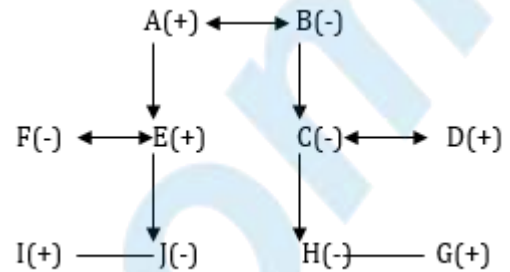


B is grandmother of G.

13. Ans. C.

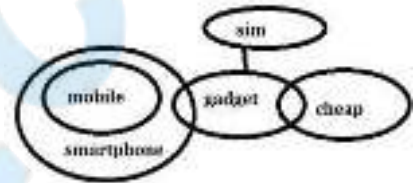
Since each couple has a son and a daughter and there are three couples in a three generation family A must be first generation and must be married to B. D, E must be 2nd generation. C is B's daughter and H is E's niece. Also, J is B's granddaughter. It means J is E's daughter. As D is J's uncle which means D and E are not married. I and G must be males of 3rd generation. If F is I's mother then F

must be married to either D or E. If F is married to D then G must be the son of F which is not possible. Therefore F is married to E and D is married to N. D and C have children as H and J. E and F have children as H and I.
Family Tree:

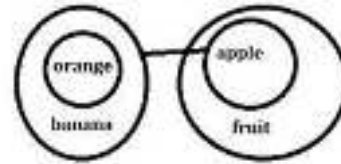


D is son-in-law of A.

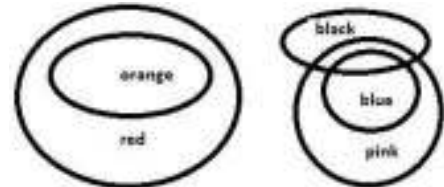
14. Ans. A.



15. Ans. E.

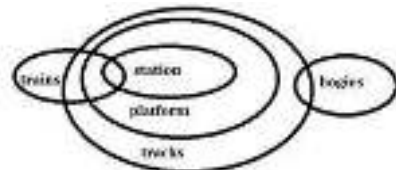


16. Ans. D.

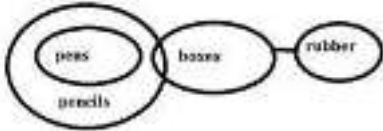


Conclusion 1 does not follow, as some red are already orange. So, some red are orange is a possibility does not follow. Because some red are Orange it definitely follows, so it's not a possibility.

17. Ans. A.



18. Ans. A.



19. Ans. D.

The code for 'damaging' is - either di or yu.
Below are the codes -

risk - nu
very - gl
also - fu
is - mi
low - se
associated - ta
that - po
large - ro
inherent - di/yu
damaging - yu/di

20. Ans. A.

'risk is very large' may represent by - gi mi nu ro
Below are the codes -

risk - nu
very - gl
also - fu
is - mi
low - se
associated - ta
that - po
large - ro
inherent - di/yu
damaging - yu/di

21. Ans. C.

the code for 'associated' is - ta
Below are the codes -

risk - nu
very - gl
also - fu
is - mi
low - se
associated - ta
that - po
large - ro
inherent - di/yu
damaging - yu/di

22. Ans. E.

the code for 'inherent large risk' is - Cannot be determined

Below are the codes -

risk - nu
very - gl
also - fu
is - mi
low - se
associated - ta
that - po
large - ro
inherent - di/yu
damaging - yu/di

23. Ans. B.

'low risk associated industry' may represent by - ta hi nu se

Below are the codes -

risk - nu
very - gl
also - fu
is - mi
low - se
associated - ta
that - po
large - ro
inherent - di/yu
damaging - yu/di

24. Ans. D.

Thus P lives on the 5th number floor.

8	W
7	Q
6	V
5	P
4	T
3	R
2	U
1	S

Hence Option D is correct.

25. Ans. A.

U lives exactly between the floors of R and S.

8	W
7	Q
6	V
5	P
4	T
3	R
2	U
1	S

Hence Option A is correct

26. Ans. C.

W lives on the topmost floor.

8	W
7	Q
6	V
5	P
4	T
3	R
2	U
1	S

Hence Option C is correct

27. Ans. B.

All the others occur at odd places except V which occurs at even place. Thus V does not belong to the group.

8	W
7	Q
6	V
5	P
4	T
3	R
2	U
1	S

Hence Option B is correct

28. Ans. E.

The solution to the above puzzle is:

4 persons that is V, P, T and R live between Q and U.

8	W
7	Q
6	V
5	P
4	T
3	R
2	U
1	S

Hence Option E is correct

29. Ans. B.

From I,

Is=7, energy/ good= 6/3.

So I alone is not sufficient

From II,

Mistakes/are=1/4, good=6.

So II alone is sufficient to answer the question.

30. Ans. D.

Neither Statement I or II alone are sufficient to answer the question.

Description: Since from statement I we cannot get clearly that the clear picture of seating of C and B. From statement II also we cannot get identify where A, B, C, D, and E are seating. Thus both I and II statement are insufficient to answer.

31. Ans. B.

From I:

$D > X = P$ and $S > R$, $D > R$.. R can be shorter or taller than P or X. So, from statement I we can not decide who is shortest.

From II:

$X = P > R$, $D > X = P$, $S > X = P$ thus it is clear that R is shortest.

Hence, data in statement II alone is sufficient to answer the question.

32. Ans. E.

From statement I- The number of students of class are 21, 22, 23, 24, 25 or 26.

From statement II- The number of students in the class are 25 or 30.

From both the statements, there are 25 students in the class.

Hence, option E is correct.

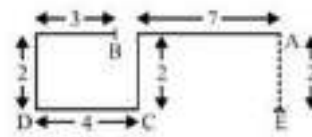
33. Ans. D.

Explanation

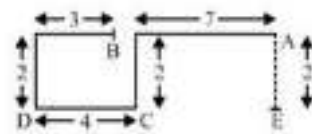
R	E	C	O	V	E	R	E	D
18	5	3	15	22	5	18	5	4

There are four such pairs

34. Ans. B.



35. Ans. D.



36. Ans. A.

Arrangement will be as



37. Ans. D.

Arrangement will be as



Hence option D is correct

38. Ans. C.

Arrangement will be as



W is in the Middle of the row
While all other four are sitting in the extreme corners
Hence option C is correct

39. Ans. C.

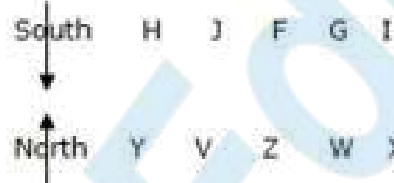
Arrangement will be as



I faces X and third person to the right of I is J
Hence option C is correct

40. Ans. B.

Arrangement will be as



An immediate neighbour of V is Z who faces F
Hence option B is correct

41. Ans. C.

I. $X=7,8$

II. $y=+8$

Remember that if $y^2 = 64$ then $y = +8$ and -8
but if $Y = \sqrt{64}$ then y will only be $+8$

42. Ans. C.

I. $X=-3$

II. $y=6,-3$

Hence answer=(c) $x \leq y$

43. Ans. E.

I. $x=3,-2$

II. $Y=2,4$

Hence answer=(e)

44. Ans. C.

$$x^2 - 11x - 80 = 0$$

$$x^2 - 16x + 5x - 80 = 0$$

$$x(x-16) + 5(x-16) = 0$$

$$(x+5)(x-16) = 0$$

$$x = +16, -5$$

$$y^2 + 9y - 52 = 0$$

$$y^2 + 13y - 4y - 52 = 0$$

$$y(y+13) - 4(y+13) = 0$$

$$(y-4)(y+13) = 0$$

$$y = +4, -13$$

Therefore, relationship between x and y can't be determined.

45. Ans. A.

$$4x^2 + 12x + 9 = 0$$

$$4x^2 + 6x + 6x + 9 = 0$$

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

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

$$2x+3=0 \text{ or } 2x+3=0$$

$$2x=-3 \text{ or } 2x=-3$$

$$x = -\frac{3}{2} \text{ or } x = -\frac{3}{2}$$

$$x = -1.5 \text{ or } y = -1.5$$

$$2y^2 + 11y + 14 = 0$$

$$2y^2 + 7y + 4y + 14 = 0$$

$$y(2y+7) + 2(2y+7) = 0$$

$$(2y+7)(y+2) = 0$$

$$2y+7=0 \text{ or } y+2=0$$

$$2y=-7 \text{ or } y=-2$$

$$y = -\frac{7}{2} \text{ or } y = -2$$

$$y = -3.5 \text{ or } y = -2$$

$$x > y$$

46. Ans. B.

$$? = 11^2 + 4^3 \times 4$$

$$? = 377 \approx 376$$

47. Ans. C.

$$423.62 - 269.89 \div (11.9\% \text{ of } 74.98) = ?$$

$$423.62 - 269.89 \div (12\% \text{ of } 75) = ?$$

$$\Rightarrow 424 - 269 \div 9 = ?$$

$$\Rightarrow 424 - 30 = ?$$

$$\Rightarrow ? = 394 \approx 395$$

48. Ans. C.

$$23 \times 15 - 60 + ? \div 31 = 292$$

$$345 - 60 + ? \times \frac{1}{31} = 292$$

$$285 + ? \times \frac{1}{31} = 292$$

$$? = 31 \times 7$$

$$? = 217.$$

49. Ans. C.

By taking approximate values

$$151 - 119 \div 17 - ?^2 = 80$$

$$151 - 7 - ?^2 = 80$$

$$144 - ?^2 = 80$$

$$?^2 = 64$$

$$? = 8.$$

50. Ans. A.

$$? \div 4 + 5 \times 9 = 132$$

$$\frac{?}{4} = 87$$

$$? = 348.$$

51. Ans. C.

$$\text{Sony: } 0.5/7.5 \times 100 = 6.66\%$$

$$\text{Microsoft: } 2/10 \times 100 = 20\%$$

$$\text{Nintendo: } 7/9 \times 100 = 77.77\%$$

$$\text{Mitashi: } 3/10 \times 100 = 30\%$$

$$\text{ROG: } 3/8 \times 100 = 37.5\%$$

52. Ans. D.

$$\text{Sony: } 0.5/7.5 \times 100 = 6.66\%$$

$$\text{Microsoft: } 2/10 \times 100 = 20\%$$

$$\text{Nintendo: } 7/9 \times 100 = 77.77\%$$

$$\text{Mitashi: } 3/10 \times 100 = 30\%$$

$$\text{ROG: } 3/8 \times 100 = 37.5\%$$

53. Ans. C.

$$\text{Total sale in 2016-2017} = 8 + 12 + 16 + 13 + 11 = 60 \text{ (in thousands)} = 60,000$$

$$\text{Total sale in 2017-2018} = 7.5 + 10 + 9 + 10 + 8 = 44.5 \text{ (in thousands)} = 44,500$$

$$\text{Absolute change or Difference} = 60,000 - 44,500 = 15,500$$

54. Ans. D.

$$\text{Combined sale of Sony and Nintendo in 2016-2017} = 7.5 + 9 = 16.5$$

$$\text{Combined sale of Sony and Nintendo in 2017-2018} = 8 + 16 = 24$$

$$\text{Percentage increase} = 7.5/16.5 \times 100 = 45.45\%$$

55. Ans. C.

$$\text{Total sale of Microsoft} = 12 + 10 = 22 \text{ (in thousands)} = 22,000$$

$$\text{Total sale of ROG} = 11 + 8 = 19 \text{ (in thousands)} = 19,000$$

$$\text{Difference} = 22,000 - 19,000 = 3,000$$

56. Ans. B.

$$\text{Appeared students from institute D in 2013} = 1765$$

$$\text{Qualified students from institute D in 2013} = 1567$$

$$\% \text{ of qualified students over appeared students}$$

$$\text{from institute D in 2013} = \frac{1567}{1765} \times 100 = 88.78\%$$

$$\text{Appeared students from institute D in 2014} = 1574$$

$$\text{Qualified students from institute D in 2014} = 1024$$

$$\% \text{ of qualified students over appeared students}$$

$$\text{from institute D in 2014} = \frac{1024}{1574} \times 100 = 65.06\%$$

$$\text{Appeared students from institute D in 2015} = 1754$$

$$\text{Qualified students from institute D in 2015} = 1210$$

$$\% \text{ of qualified students over appeared students}$$

$$\text{from institute D in 2015} = \frac{1210}{1754} \times 100 = 68.98\%$$

$$\text{Appeared students from institute D in 2016} = 1364$$

$$\text{Qualified students from institute D in 2016} = 1145$$

$$\% \text{ of qualified students over appeared students}$$

$$\text{from institute D in 2016} = \frac{1145}{1364} \times 100 = 83.94\%$$

$$\text{Appeared students from institute D in 2017} = 1510$$

$$\text{Qualified students from institute D in 2017} = 1214$$

% of qualified students over appeared students
 from institute D in 2017 = $\frac{1214}{1510} \times 100 = 80.39\%$
 Hence, the lowest percentage of institute D is in 2014.

57. Ans. D.
 Qualified students from all the institutes in 2017 = 6840
 Appeared students from all the students in 2017 = 7984
 Required percentage = $\frac{6840}{7984} \times 100 = 86\%$

58. Ans. E.
 Appeared students from institute B in 2014 = 1654
 Qualified students from institute B in 2014 = 1566
 Not qualified students from institute B in 2014 = 1654 - 1566 = 88
 Appeared students from institute B in 2016 = 1440
 Qualified students from institute B in 2016 = 1165
 Not qualified students from institute B in 2016 = 1440 - 1165 = 275
 Required difference = 275 - 88 = 187

59. Ans. C.
 Required value = $\frac{1530+1886+1806+1478+1645}{5} = 1669$

60. Ans. A.
 Required percentage = $\frac{7072}{8460} \times 100 = 83.59\%$

61. Ans. E.
 Average weight of 17 students = 90 kg
 Let, the weight of teacher be x
 So, the average weight is increased by 200 grams
 Therefore, $\frac{(17 \times 90) + x}{18} = 90 + \frac{200}{1000}$
 $\frac{1530 + x}{18} = 90.2$
 $1530 + x = 1623.6$
 $x = 1623.6 - 1530 = 93.6 \text{ kgs}$
 Therefore, the weight of the teacher = 93.6 kgs
 So option (e) is the correct answer.

62. Ans. A.
 Speed downstream = 8 + 2 = 10 kmph
 Speed upstream = 8 - 2 = 6 kmph

Let the required distance be d km.
 Then, $\frac{d}{10} + \frac{d}{6} = 2$; $6d + 10d = 120$
 $16d = 120$; $d = 7.5 \text{ km}$

63. Ans. C.
 Let the sum be Rs. P.
 S.I. = Rs. (900 - P)
 So, $\frac{P \times 10 \times 5}{100} = 900 - P$
 $50P = 90000 - 100P$
 $150P = 90000$
 $P = \text{Rs. } 600$
 Now, $P = 600$, $R = 15\%$, $T = \frac{5}{2} \text{ years}$

S.I. = $\frac{600 \times 15 \times 5}{100 \times 2} = \text{Rs. } 225$
 Hence, amount = 600 + 225 = Rs. 825

64. Ans. E.
 Profit ratio of A, B and C,
 $A : B : C = (10,000 \times 12) : (7500 \times 12) : (10,000 \times 9) = 4 : 3 : 3$
 Hence, B's share = $(3/10) \times 12000 = \text{Rs. } 3600$

65. Ans. B.
 Let Rubina's monthly salary = x
 According to question,
 75% of 16% of x = 6567
 $x = \frac{6567 \times 100 \times 100}{75 \times 16}$
 $x = \frac{65670000}{1200} = \text{Rs. } 54725$

66. Ans. C.
 Let capacity of tank = 60 units
 Efficiency of A = $\frac{60}{12} = 5 \text{ units/hour}$
 Efficiency of B = $\frac{60}{15} = 4 \text{ units/hour}$
 Efficiency of C = $\frac{60}{6} = 10 \text{ units/hour}$
 Efficiency of A and B together = 5 + 4 = 9 units/hour
 Tank filled in 5 hours = 9 x 5 = 45 units
 Efficiency of A, B and C together = 5 + 4 - 10 = - 1 unit/hour
 Hence, time taken to empty the tank = $\frac{45}{1} = 45$ hours

67. Ans. C.

Let the present age of the man and his son be x and y respectively

So,

$$x - 5 = 4(y - 5) + 3$$

$$x - 4y = -12 \quad (i)$$

Again

$$X + 3 = 3(y + 3) - 6$$

$$x - 3y = 0 \quad (ii)$$

By solving, we get

$$X = 36, y = 12$$

Sum of their ages = 48

Hence after 16 years the sum of their ages will be 80 years.

68. Ans. E.

Let the incomes of Ram and Sham be $5x$ and $4x$ respectively.

Now,

$$(5x - 1200)/(4x - 1200) = 3/2$$

$$x = 600$$

$$\text{Income of Ram} = 5x = 3000$$

69. Ans. A.

Let total work = 36 units (LCM of 12 and 18)

$$\text{Efficiency of A} = \frac{36}{12} = 3 \text{ units/day}$$

$$\text{Efficiency of B} = \frac{36}{18} = 2 \text{ units/day}$$

1 day work of A and B together = $3 + 2 = 5$ units/day

Last 2 days' work of B = $2 \times 2 = 4$ units

Hence, rest work completed together = $36 - 4 = 32$ units.

Hence, days the rest work is completed by A and B

$$= \frac{32}{5} \text{ days}$$

$$\text{So, total days} = 2 + \frac{32}{5} = \frac{42}{5} \text{ days}$$

70. Ans. E.

$$\text{Relative speed} = 50 + 40 = 90 \text{ km/h} = 90 \times \frac{5}{18} =$$

25 m/sec

Distance covered = $750 + 750 = 1500$ meters

$$\text{Required time} = \frac{1500}{25} = 60 \text{ seconds}$$

71. Ans. A.

$$8 \times 1 + 1 = 9$$

$$9 \times 1.5 + 1.5 = 15$$

$$15 \times 2 + 2 = 32$$

$$32 \times 2.5 + 2.5 = 82.5$$

$$82.5 \times 3 + 3 = 250.5$$

72. Ans. A.

$$2 + 1^3 + 2 = 5$$

$$5 + 2^3 - 4 = 9$$

$$9 + 3^3 + 6 = 42$$

$$42 + 4^3 - 8 = 98$$

$$98 + 5^3 + 10 = 233$$

73. Ans. B.

$$100 \times 1 = 100$$

$$100 \times 0.5 = 50$$

$$50 \times 0.25 = 12.5$$

$$12.5 \times 0.125 = 1.5625$$

74. Ans. A.

$$12 \times 1.5 + 2 = 20$$

$$20 \times 1.5 + 4 = 34$$

$$34 \times 1.5 + 6 = 57$$

$$57 \times 1.5 + 8 = 93.5$$

75. Ans. D.

$$1023 - 36 = 987$$

$$987 - 72 = 915$$

$$915 - 108 = 807$$

$$807 - 144 = 663$$

76. Ans. D.

Both the statements individually do not answer the question.

Combining statement 1 & 2:

The train takes 2 seconds to cross 50m distance.

Therefore, speed of the train = $50/2 = 25$ m/s

And, length of the train = $25 \times 5 = 125$ m.

Hence, option is 4.

77. Ans. A.

$3/4^{\text{th}}$ work in 6 hours. Total work can be completed in 8 hours.

From statement 1:

$$1/a + 1/b = 1/8$$

$$\Rightarrow 1/b = 1/10$$

Therefore, A finishes the work in 40 hours.

Statement 2 alone is not sufficient.

Hence, option is 1.

78. Ans. D.

$$\text{From I, Pravin} = \text{Aman} + 1200$$

$$\text{From II and III, } \frac{\text{Aman}}{\text{Vimal}} = \frac{5}{3}$$

$$\frac{\text{Aman}}{\text{Aman} - 1000} = \frac{5}{3}$$

\therefore All statements are necessary to get the monthly salary of Pravin.

79. Ans. D.

From statement I:

SP = Selling Price

MP = Marked Price

CP = Cost price

SP = 90% MP

SP = $9MP/10$

From statement II:

When no discount is given,

SP = MP

Profit = SP - CP

$35 = (SP - CP) * 100/CP$

$35CP = 100SP - 100CP$

$135CP = 100SP$

$CP = 100SP/135$

$CP = 100MP/135$

From both I and II:

Profit% = $(9MP/10 - 100MP/135) * 100 / (100MP/135) \%$

$= (9/10 - 100/135) * 135 \%$

Hence, both the statements are required to answer this question

80. Ans. D.

From I. There are 11 students in the class.

From II. The average age of students and class teacher is 14 years.

From III. The average age of class teacher is 3 years more than that of students.

Now, combining all these statements, we have

Average age of (students + teacher) = $14 \times 12 = 168$ years

Average age of 11 students = $14 - 3 = 11$ years

Total age of 11 students = $11 \times 11 = 121$ years

Teacher's age = $168 - 121 = 47$ years.

This requires all statements to complete the calculations.
