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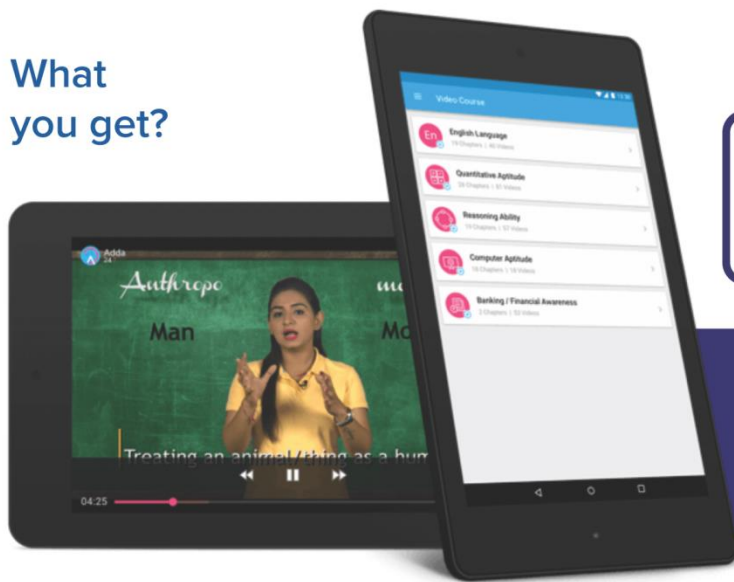
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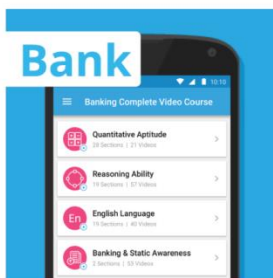


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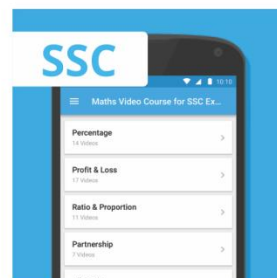


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## Solutions

**Solution (1 -5):**

Floor	Person	Subject	Colour
7	Q	Maths	Violet
6	P	Physics	White
5	U	Chemistry	Red
4	S	Hindi	Pink
3	T	Sanskrit	Orange
2	V	Economics	Blue
1	R	Biology	Yellow

**S1. Ans.(b)**

**S2. Ans.(b)**

**S3. Ans.(d)**

**S4. Ans.(c)**

**S5. Ans.(d)**

**Solution (6-10):**

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≤---\$



**S6. Ans.(d)**

**Sol. Statement-**  $P \leq T \geq L < U$

**Conclusion-**  $P \geq L, U = L$

**S7. Ans.(b)**

**Sol. Statement-**  $A \geq B > D = K$

**Conclusion-**  $A = K, B > K$

**S8. Ans.(e)**

**Sol. Statement-**  $J < K = L \geq P$

**Conclusion-**  $P \leq K, J < L$

**S9. Ans.(a)**

**Sol. Statement-**  $V \leq M > T > O$

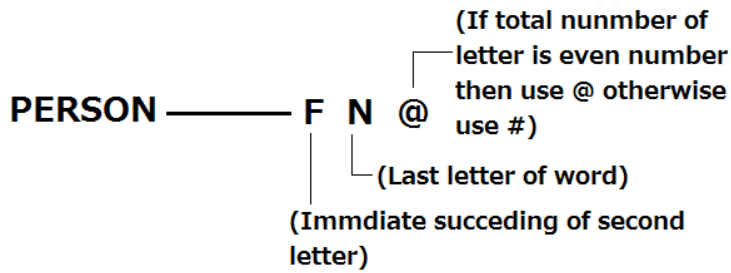
**Conclusion-**  $M > T, O > V$

**S10. Ans.(d)**

**Sol. Statement-**  $K \geq T < C \leq P$

**Conclusion-**  $C = K, C > K$

Solutions (11-15):



S11. Ans.(b)

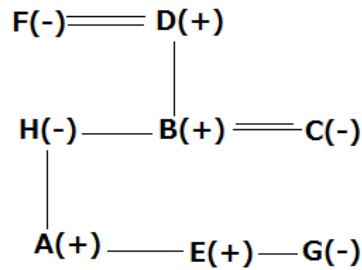
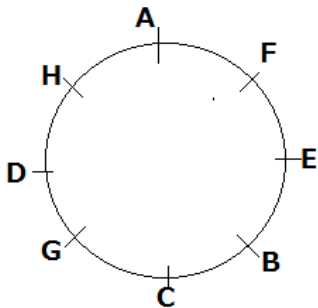
S12. Ans.(b)

S13. Ans.(d)

S14. Ans.(d)

S15. Ans.(d)

Solution (16-20):



S16. Ans.(a)

S17. Ans.(b)

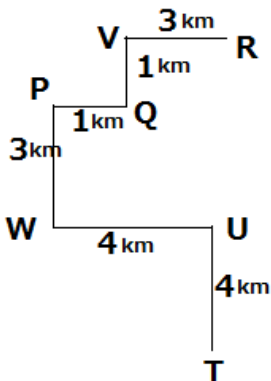
S18. Ans.(a)

S19. Ans.(a)

S20. Ans.(d)

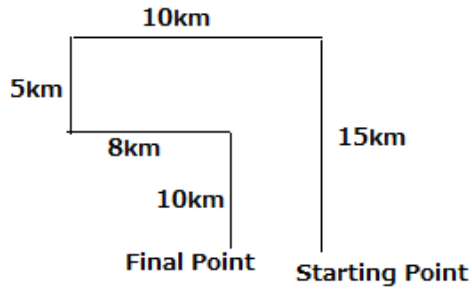
S21. Ans.(d)

Sol. The distance between T and R= 4+3+1=8km



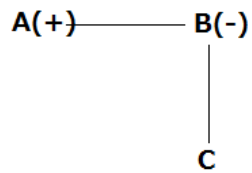
S22. Ans.(e)

Sol.



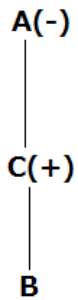
S23. Ans.(c)

Sol.



S24. Ans.(d)

Sol.



S25. Ans.(a)

Sol. Students between R and T are= 11

S26. Ans.(c)

Sol.

Floor	Employees	Character
9	B	Hagrid
8	F	Weasley
7	C	Malfoy
6	E	Hermione
5	A	Potter
4	G	Voldemort
3	D	Sirius Black
2	I	Dumbledore
1	H	Snape

**S27. Ans.(a)**

**Sol.**

Floor	Employees	Character
9	B	Hagrid
8	F	Weasley
7	C	Malfoy
6	E	Hermione
5	A	Potter
4	G	Voldemort
3	D	Sirius Black
2	I	Dumbledore
1	H	Snape

**S28. Ans.(b)**

**Sol.**

Floor	Employees	Character
9	B	Hagrid
8	F	Weasley
7	C	Malfoy
6	E	Hermione
5	A	Potter
4	G	Voldemort
3	D	Sirius Black
2	I	Dumbledore
1	H	Snape

**S29. Ans.(e)**

**Sol.**

Floor	Employees	Character
9	B	Hagrid
8	F	Weasley
7	C	Malfoy
6	E	Hermione
5	A	Potter
4	G	Voldemort
3	D	Sirius Black
2	I	Dumbledore
1	H	Snape

**S30. Ans.(a)****Sol.**

Floor	Employees	Character
9	B	Hagrid
8	F	Weasley
7	C	Malfoy
6	E	Hermione
5	A	Potter
4	G	Voldemort
3	D	Sirius Black
2	I	Dumbledore
1	H	Snape

**S31. Ans.(b)**

**Sol.** Students let us understand the Logic behind this Question and let's understand how to solve it. When we see the each step, then we can find that

- (i) First, those words are arranged which start with vowel in increasing alphabetical order. After that those words are arranged which start with consonant in increasing alphabetical order.
- (ii) Numbers are arranged in decreasing order.

**INPUT: 71 nose 83 umbrella 37 Queen Floor 59 17 owl**

Step 1: owl 71 nose 83 umbrella 37 Queen Floor 59 17

Step 2: owl 83 71 nose umbrella 37 Queen Floor 59 17

Step 3: owl 83 umbrella 71 nose 37 Queen Floor 59 17

Step 4: owl 83 umbrella 71 floor nose 37 Queen 59 17

Step 5: owl 83 umbrella 71 floor 59 nose 37 Queen 17

**S32. Ans.(d)**

**Sol.** Students let us understand the Logic behind this Question and let's understand how to solve it. When we see the each step, then we can find that

- (i) First, those words are arranged which start with vowel in increasing alphabetical order. After that those words are arranged which start with consonant in increasing alphabetical order.
- (ii) Numbers are arranged in decreasing order.

**INPUT: 71 nose 83 umbrella 37 Queen Floor 59 17 owl**

Step 1: owl 71 nose 83 umbrella 37 Queen Floor 59 17

Step 2: owl 83 71 nose umbrella 37 Queen Floor 59 17

Step 3: owl 83 umbrella 71 nose 37 Queen Floor 59 17

Step 4: owl 83 umbrella 71 floor nose 37 Queen 59 17

Step 5: owl 83 umbrella 71 floor 59 nose 37 Queen 17

**S33. Ans.(a)**

**Sol.** Students let us understand the Logic behind this Question and let's understand how to solve it. When we see the each step, then we can find that

(i) First, those words are arranged which start with vowel in increasing alphabetical order. After that those words are arranged which start with consonant in increasing alphabetical order.

(ii) Numbers are arranged in decreasing order.

**INPUT: 71 nose 83 umbrella 37 Queen Floor 59 17 owl**

Step 1: owl 71 nose 83 umbrella 37 Queen Floor 59 17

Step 2: owl 83 71 nose umbrella 37 Queen Floor 59 17

Step 3: owl 83 umbrella 71 nose 37 Queen Floor 59 17

Step 4: owl 83 umbrella 71 floor nose 37 Queen 59 17

Step 5: owl 83 umbrella 71 floor 59 nose 37 Queen 17

**S34. Ans.(d)**

**Sol.** Students let us understand the Logic behind this Question and let's understand how to solve it. When we see the each step, then we can find that

(i) First, those words are arranged which start with vowel in increasing alphabetical order. After that those words are arranged which start with consonant in increasing alphabetical order.

(ii) Numbers are arranged in decreasing order.

**INPUT: 71 nose 83 umbrella 37 Queen Floor 59 17 owl**

Step 1: owl 71 nose 83 umbrella 37 Queen Floor 59 17

Step 2: owl 83 71 nose umbrella 37 Queen Floor 59 17

Step 3: owl 83 umbrella 71 nose 37 Queen Floor 59 17

Step 4: owl 83 umbrella 71 floor nose 37 Queen 59 17

Step 5: owl 83 umbrella 71 floor 59 nose 37 Queen 17

**S35. Ans.(b)**

**Sol.** Students let us understand the Logic behind this Question and let's understand how to solve it. When we see the each step, then we can find that

(i) First, those words are arranged which start with vowel in increasing alphabetical order. After that those words are arranged which start with consonant in increasing alphabetical order.

(ii) Numbers are arranged in decreasing order.

**INPUT: 71 nose 83 umbrella 37 Queen Floor 59 17 owl**

Step 1: owl 71 nose 83 umbrella 37 Queen Floor 59 17

Step 2: owl 83 71 nose umbrella 37 Queen Floor 59 17

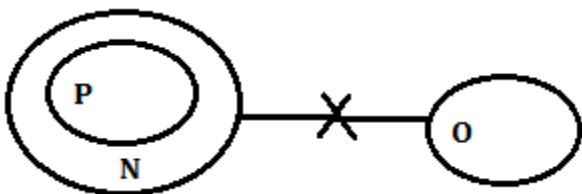
Step 3: owl 83 umbrella 71 nose 37 Queen Floor 59 17

Step 4: owl 83 umbrella 71 floor nose 37 Queen 59 17

Step 5: owl 83 umbrella 71 floor 59 nose 37 Queen 17

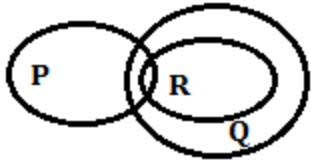
**S36. Ans.(d)**

**Sol.**



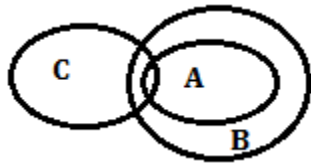
S37. Ans.(a)

Sol.



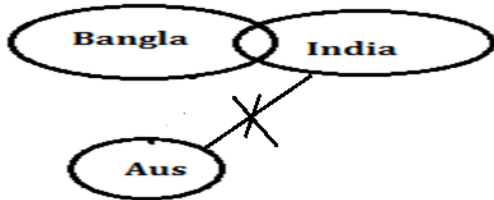
S38. Ans.(c)

Sol.



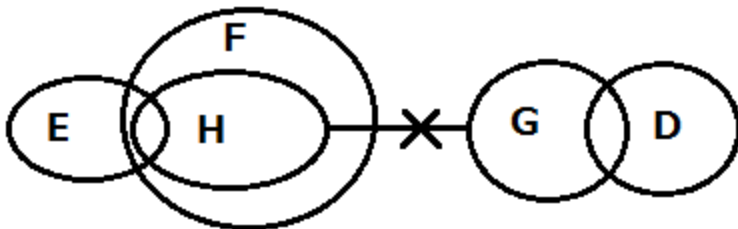
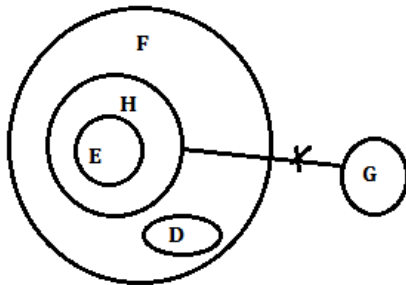
S39. Ans.(d)

Sol.



S40. Ans.(c)

Sol.



S41. Ans.(b)

Sol.





$$\begin{array}{ccccccc}
 & & & 60 & & & \\
 336 & 210 & 120 & \boxed{62} & 24 & 6 & 0 \\
 \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\
 7^3 - 7 & 6^3 - 6 & 5^3 - 5 & 4^3 - 4 & 3^3 - 3 & 2^3 - 2 & 1^3 - 1
 \end{array}$$

So, wrong number = 62

Right number =  $4^3 - 4 = 60$

**S42. Ans.(a)**

**Sol.**

$$\begin{array}{cccccccccc}
 & & & 11 & & & & & & \\
 5 & 3 & 6 & \boxed{10} & 9 & 12 & 17 & 15 & 18 & 23 \\
 \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\
 -2 & +3 & +5 & -2 & +3 & +5 & -2 & +3 & +5 & 
 \end{array}$$

So, wrong number = 10

Right number =  $6 + 5 = 11$

**S43. Ans.(e)**

**Sol.**

$$\begin{array}{ccccccc}
 & & & 24 & & & \\
 0 & 3 & 8 & 15 & \boxed{27} & 35 & 48 \\
 \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\
 +3 & +5 & +7 & +9 & +11 & +13 & 
 \end{array}$$

So, wrong number = 27

Right number =  $15 + 9 = 24$

**S44. Ans.(c)**

**Sol.**

$$\begin{array}{cccccc}
 & & & 50 & & \\
 8 & 14 & 26 & \boxed{48} & 98 & 194 \\
 \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\
 \times 2 - 2 & \times 2 - 2 & \times 2 - 2 & \times 2 - 2 & \times 2 - 2 & 
 \end{array}$$

So, wrong number = 48

Right number =  $26 \times 2 - 2 = 50$

**S45. Ans.(d)**

**Sol.**

$$\begin{array}{cccccc}
 & & & & 312 & \\
 12 & 32 & 72 & 152 & \boxed{314} & 632 \\
 \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\
 \times 2 + 8 & \times 2 + 8 & \times 2 + 8 & \times 2 + 8 & \times 2 + 8 & 
 \end{array}$$

So, wrong number = 314

Right number =  $152 \times 2 + 8 = 312$

**S46. Ans.(a)**

**Sol.**

Let the fare be  $x$  and Reservation charge be  $R$

$$x + R = 525$$

$$\Rightarrow \frac{3}{2}x + 2R = 850 \quad \dots (i)$$

$$\Rightarrow \frac{3}{2}x + \frac{3}{2}R = \frac{3}{2} \times 525 \quad \dots (ii)$$

$$\Rightarrow \frac{1}{2}R = \left(850 - \frac{3}{2} \times 525\right) = \frac{(1700 - 1575)}{2}$$

$$\therefore R = 1700 - 1575 = \text{Rs. } 125$$

**S47. Ans.(b)**

**Sol.**

Let the required sum lent to Sunil be Rs. x.

$$\therefore \frac{x \times 3 \times 9}{100} - \frac{1150 \times 3 \times 6}{100} = \text{Rs. } 274.95$$

$$\Rightarrow 9x - 6900 = 274.95 \times \frac{100}{3}$$

$$\therefore x = \frac{9165 + 6900}{9} = \text{Rs. } 1785$$

**S48. Ans.(e)**

**Sol.**

Number of ways of wearing a pair of shoes = 3

Number of ways of wearing a lower = 4 + 3 = 7

Number of ways of wearing an upper wear = (6 + 3) + (6 × 3) = 27

Number of ways of wearing a jacket = 3

Total number of different outfits = 3 × 7 × 27 × 3 = 1701

**S49. Ans.(d)**

**Sol.**

For set A

$$x + x + 2 + x + 4 + x + 6 + x + 8 = 280$$

$$\Rightarrow 5x = 260$$

$$\Rightarrow x = \frac{260}{5} = 52$$

The lowest number of set B = 2 × 52 - 71 = 33

∴ Required sum = 33 + 34 + 35 + 36 + 37 = 175

**S50. Ans.(e)**

**Sol.**

Suppose required number = 10x + y

Where x > y

According to the question,

$$(10x + y) - (10y + x) = 54$$

$$\Rightarrow 9x - 9y = 54$$

$$\Rightarrow x - y = 6 \quad \dots\dots(i)$$

$$\text{and } x + y = 12 \quad \dots\dots(ii)$$

From eqn. (i) and (ii),

$$x - y = 6$$

$$x + y = 12$$

$$x = 9$$

Value of  $x = 9$  put in eqn. (ii)

$$9 + y = 12$$

$$y = 3$$

$$\therefore \text{Number} = 10 \times 9 + 3 = 90 + 3 = 93$$

**S51. Ans.(e)**

**Sol.**

$$\begin{aligned} & 4 + \left( \frac{1}{6} + \frac{3}{4} - \frac{1}{4} \right) \\ &= 4 + \left( \frac{2 + 9 - 3}{12} \right) \\ &= 4 + \left( \frac{8}{12} \right) \\ &= 4 \frac{2}{3} \end{aligned}$$

**S52. Ans.(b)**

**Sol.**

$$? = \frac{403.35 - 307.83}{398} \times 100 = 0.24 \times 100$$

$$\text{Or, } ? = 24$$

**S53. Ans.(a)**

**Sol.**

$$(3.7)^{-3} \times (13.69)^{-2} \times \frac{1}{50.653} \div (13.69)^{-5} = (3.7)^?$$

$$\text{Or, } (3.7)^? = (3.7)^{-3} \times (3.7)^{-2 \times 2} \times (3.7)^{-3} \times (3.7)^{10} = (3.7)^{-3-4-3+10} = (3.7)^0$$

$$\therefore ? = 0$$

**S54. Ans.(c)**

**Sol.**

$$17.8\% \text{ of } ? = 427.2 \times 8.4\% \text{ of } 135$$

$$\text{Or, } \frac{17.8 \times ?}{100} = \frac{427.2 \times 8.4 \times 135}{100}$$

$$\therefore ? = \frac{427.2 \times 8.4 \times 135}{17.8} = 27216$$

**S55. Ans.(e)**

**Sol.**

$$5 + 10 - 2\sqrt{50} + 2 + 25 + 10\sqrt{2} = (?)^3 - 22$$

$$42 - 10\sqrt{2} + 10\sqrt{2} = (?)^3 - 22$$

$$(?)^3 = 64$$

$$? = 4$$

**S56. Ans.(d)**

**Sol.**

Income of HP =  $I_1$  in 2008

$$\therefore 35 = \frac{I_1 - 12}{12} \times 100$$

$$I_1 = \text{Rs. } 16.2 \text{ L}$$

In 2009, Let Income =  $I_2$

$$\therefore 50 = \frac{I_2 - 14.5}{14.5} \times 100$$

$$I_2 = 21.75 \text{ L}$$

$$\therefore \text{total income} = 21.75 \text{ L} + 16.2 \text{ L} = 37.95 \text{ L}$$

**S57. Ans.(e)**

**Sol.**

Let the respective expenditures of both Sony and HP be Rs.  $3x$  and Rs.  $4x$  lakhs.

$$\therefore I_{\text{sony}} \text{ in } 2011 \Rightarrow 30 = \frac{I_1 - 3x}{3x} \times 100$$

$$\text{or, } I_1 = 3.9x$$

$$\text{Again, } I_{\text{HP}} \text{ in } 2011 \Rightarrow 40 = \frac{I_2 - 4x}{4x} \times 100$$

$$\Rightarrow I_2 = 5.6x$$

$$\text{Desired ratio} \Rightarrow I_{\text{sony}} : I_{\text{HP}} = 3.9x : 5.6x$$

$$= 39 : 56$$

**S58. Ans.(d)**

**Sol.** It can't be determined as data given are inadequate.

**S59. Ans.(a)**

**Sol.**

Let expenditure of both Sony and HP in 2012 be Rs.  $x$  lakhs & their respective incomes be Rs.  $I_1$  &  $I_2$  lakhs.

$$\therefore \text{Profit\% for Sony} = 40$$

$$\& \text{Profit\% for HP} = 45$$

$$\therefore 40 = \frac{I_1 - x}{x} \times 100 \quad \dots (i)$$

$$\& 45 = \frac{I_2 - x}{x} \times 100 \quad \dots (ii)$$

From (i) and (ii)

$$x = \text{Rs. } 2 \text{ L}$$

$$\therefore \text{Total expenditure} = 2 \times 2 = \text{Rs. } 4 \text{ lakh}$$

**S60. Ans.(c)**

**Sol.**

Let the income be Rs.  $2x$  and Rs.  $3x$  lakhs respectively in 2009 and 2010 for HP.

$\therefore$  In 2009,

$$50 = \frac{2x - E_1}{E_1} \times 100$$

$$\Rightarrow 1.5 E_1 = 2x$$

$$\Rightarrow E_1 = \frac{2x}{1.5} \text{ Lakh}$$

In 2010,

$$45 = \frac{3x - E_2}{E_2} \times 100$$

$$\Rightarrow E_2 = \frac{3x}{1.45}$$

$$\therefore \frac{2x}{1.5} : \frac{3x}{1.45} = 29 : 45.$$

**S61. Ans.(a)**

**Sol.**

Let Arun's weight be X kg.

According to Arun,  $65 < X < 70$

According to Arun's Brother,  $60 < X < 72$

According to Arun's Mother,  $X \leq 68$

The values satisfying all the above conditions may be 66, 67 and 68.

$$\therefore \text{Required average} = \frac{66 + 67 + 68}{3} = 67 \text{ kg}$$

**S62. Ans.(d)**

**Sol.**

LCM of 252, 308 and 198 = 2772

So, A, B and C will again meet at the starting point in 2772 sec

$$= \frac{2772}{60} = 46 \text{ min } 12 \text{ sec}$$

**S63. Ans.(b)**

**Sol.**

P (at least one good) = 1 - P (all bad)

$$1 - \frac{{}^4C_3}{{}^{12}C_3} = 1 - \frac{4}{220} = \frac{54}{55}$$

**S64. Ans.(d)**

**Sol.**

Work done in one day by A, B, C and D are  $\frac{1}{4}$ ,  $\frac{1}{8}$ ,  $\frac{1}{16}$  and  $\frac{1}{32}$  respectively

Using option,

B & C does  $\frac{3}{16}$  of work in one day

While A & d does  $\frac{1}{4} + \frac{1}{32} = \frac{9}{32}$  of work in one day.

Hence,

A & D take  $\frac{32}{9}$  days.

While B & C take  $\frac{16}{3} = \frac{32}{6}$  days

Hence, the 1<sup>st</sup> pair must comprise of A & D.

**S65. Ans.(c)**

**Sol.**

$$D_1 = 20 T_1$$

$$D_2 = 25 T_2$$

Given  $D_1 - D_2 = 80$  &  $T_1 = T_2$  as both travel for the same time

$$\therefore 25T_1 - 20T_1 = 80$$

$$T_1 = 16$$

$$\therefore D_2 = 25 \times 16 = 400 \text{ kms}$$

$$\& D_1 = 20 \times 16 = 320 \text{ kms}$$

$$\text{Total distance} = 400 + 320 = 720 \text{ kms}$$

**S66. Ans.(d)**

$$\text{Sol. } 25 \times 17 + 136 \div 17 = 433$$

**S67. Ans.(b)**

$$\text{Sol. } (115 + 235) \times 5 = 350 \times 5 = 1750$$

**S68. Ans.(a)**

**Sol.**

$$? \approx \frac{2.5 \times 246}{6147} \times 100 \approx 10$$

**S69. Ans.(c)**

**Sol.**

$$5.6 \times 2569 + 2058 - 157\% \times 6529 = ?$$

$$? = 14390 + 2060 - 10250 = 6200$$

**S70. Ans.(d)**

**Sol.**

$$208 \times 7.5\% + 424 \times 25\%$$

$$= 15.6 + 106 \approx 121$$

**71. Ans.(d)**

**Sol.**

$$x = 8$$

$$y = 7$$

$$\therefore x > y$$

**72. Ans.(c)**

**Sol.**

$$x = 2, \frac{\sqrt{17}}{3}$$

$$y = \frac{\sqrt{17}}{2}, \frac{9}{5}$$

$\therefore$  No relation can be established

**73. Ans.(d)**

**Sol.**

$$x = 13$$

$$y = 7.6$$

$$\therefore x > y$$

**74. Ans.(a)**



**Sol.**

$$x = \pm\sqrt{6}, y=8$$

$$\therefore x < y$$

**75. Ans.(d)**

**Sol.**

$$x = 4$$

$$y = 3$$

$$\therefore x > y$$

**S76. Ans.(c)**

**Sol.**

Amount invested by Gaurav in scheme M = 54% of 84000

$$= \text{Rs. } 45360$$

$\therefore$  Amount invested by Rishabh in scheme M = 84000 - 45360

$$= \text{Rs. } 38640$$

Let the required rate be  $r\%$  per annum. Then,

$$= \frac{45360 \times r \times 4}{100} - \frac{38640 \times r \times 4}{100} = 4435.20$$

$$\Rightarrow 6720 \times r \times 4 = 443520$$

$$\Rightarrow r = 16.5\%$$

**S77. Ans.(a)**

**Sol.**

Required ratio = (Total amount invested by Gaurav in schemes O and Q together) : (Total amount invested by Rishabh in schemes O and Q together)

$$= (40\% \text{ of } 32000 + 42\% \text{ of } 64000) : (60\% \text{ of } 32000 + 58\% \text{ of } 64000)$$

$$= 39680 : 56320 = 31 : 44$$

**S78. Ans.(a)**

**Sol.**

Difference of amount invested by Gaurav and Rishabh in

Scheme O = 60% of 32000 - 40% of 32000 = 20% of 32000

$$= \text{Rs. } 6400$$

$\therefore$  Required difference in their interest

$$= 6400 \left[ \left( 1 + \frac{12}{100} \right)^2 - 1 \right] = 6400 \times 0.2544 = \text{Rs. } 1628.16$$

**S79. Ans.(b)**

**Sol.**

Amount invested by Rishabh in investment R

$$= (100 - 64)\% \text{ of } 96000 = 36\% \text{ of } 96000 = \text{Rs. } 34560$$

Then, total interest earned by Rishabh after 4 year

$$= \frac{34560 \times 7 \times 2}{100} + 21\% \text{ of } (34560 + \text{SI of first 2 years})$$

$$= 4838.40 + 8273.664 = \text{Rs. } 13112.064$$

**S80. Ans.(a)**

**Sol.**

Amount invested by Gaurav in each of scheme S and N

$$= 60\% \text{ of } 72000 = 43200$$

Let the rate of interest be  $r\%$  per annum.

Then, according to the question,

$$349.92 = \frac{43200 \times r^2}{100^2}$$

$$\text{or, } r^2 = 81$$

$$\therefore r = 9\%$$



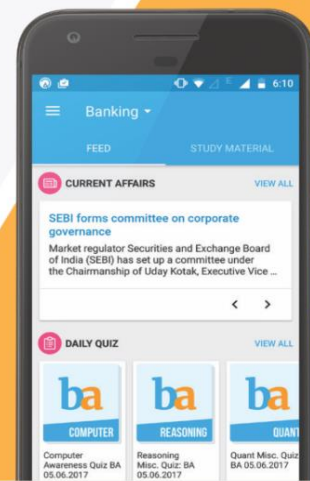




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