

Quant Mega Quiz for SSC Tier - 1 (Solutions)

S1. Ans.(a)

Sol.

$$x \times \frac{121}{100} = 58166 \text{ Crore}$$

$$x \cong 48071 \text{ Crore.}$$

S2. Ans.(b)

Sol.

$$x = 10000 \times \frac{25}{100} \times \frac{3}{100} = 75$$

S3. Ans.(c)

Sol.

$$\text{Increased By} = 10000$$

$$\% \text{ Increase} = \frac{10000}{40000} \times 100 = 25\%$$

S4. Ans.(b)

Sol.

$$\text{Increase} = 52000 - 48643 = 3357$$

$$\% \text{ Increase} = \frac{3357}{48643} \times 100 \cong 6.9\%$$

S5. Ans.(b)

Sol.

$$\text{Average} = \frac{117055 + 129750 + 143000}{3} = \frac{389805}{3} = 129935$$

S6. Ans.(c)

Sol.

$$\text{Required}\% = \frac{143000}{48643} \times 100 \cong 293.9\%$$

S7. Ans.(c)

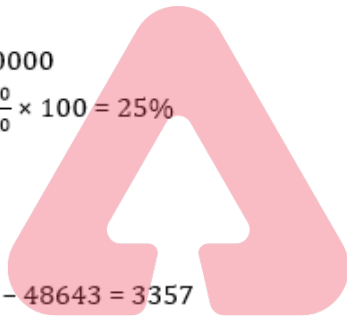
Sol.

$$\text{Average earning passenger} = \frac{117055 + 129750 + 143000}{3} = \frac{389805}{3} = 129935$$

$$\text{Average Earning Flight} = \frac{48643 + 52000 + 56000}{3} = \frac{156643}{3} \cong 52214$$

$$\text{More} = 129935 - 52214 = 77721$$

$$\text{Required}\% = \frac{77721}{52214} \times 100 \cong 148.8\%$$



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Useful for CGL, CHSL & others

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12 Months Validity*

S8. Ans.(a)

Sol.

$$\begin{aligned}\% \text{ increase} &= \frac{143000 - 129750}{129750} \times 100 \\ &= \frac{1325000}{129750} \cong 10\%\end{aligned}$$

S9. Ans.(b)

Sol.

$$\begin{aligned}\% \text{ Increase} &= \frac{272647 - 245276}{245276} \times 100 \\ &= \frac{2737100}{245276} \cong 11.15\%\end{aligned}$$

S10. Ans.(a)

Sol.

$$\text{New tax Base} = 3.79 \times \frac{180}{100} \cong 6.82 \text{ Crore}$$

$$\text{Ratio} = 3.79 : 6.82$$

$$= 379 : 682$$

S11. Ans.(c)

Sol.

Remaining amount

$$= (50000 - (8000 + 24000)) = \text{Rs. } 18000$$

Let Rs. 18000 be lent at the rate of $r\%$ p.a.

According to the question,

$$\frac{8000 \times 11 \times 1}{2 \times 100} + \frac{24000 \times 6 \times 1}{100} + \frac{18000 + r \times 1}{100}$$

$$= 3680$$

$$\Rightarrow 440 + 1440 + 180r = 3680$$

$$\Rightarrow 1880 + 180r = 3680$$

$$\Rightarrow 180r = 3680 - 1880 = 1800$$

$$\Rightarrow r = \frac{1800}{180} = 10\%$$

S12. Ans.(c)

Sol.

$$\text{Time taken by both Ravi and Rajesh} = \sqrt{t_1 t_2}$$

Here, $t_1 = 32$ hours,

$$t_2 = 12 \frac{1}{2} = \frac{25}{2}$$

$$\text{So, required time} = \sqrt{32 \times \frac{25}{2}} = 20 \text{ hours}$$



S13. Ans.(b)**Sol.**

Let leak can empty the tank in x hrs.

 $\therefore \frac{8}{3}$ hours work of two pipes and leakage

$$= \left(\frac{1}{16} + \frac{1}{24} - \frac{1}{x} \right) \times \frac{8}{3}$$

$$= \left(\frac{1}{6} + \frac{1}{9} - \frac{8}{3x} \right)$$

$$= \left(\frac{5}{18} - \frac{8}{3x} \right)$$

$$\text{Remaining part} = 1 - \left(\frac{5}{18} - \frac{8}{3x} \right) = \left(\frac{13}{18} + \frac{8}{3x} \right)$$

$$\therefore \frac{48}{5} \left(\frac{13}{18} + \frac{8}{3x} \right) = \frac{48}{5}$$

$$\Rightarrow \frac{8}{3x} = \frac{5}{18}$$

$$\Rightarrow x = \frac{48}{5}$$

$$\Rightarrow x = 9.6 \text{ hours}$$

S14. Ans.(a)**Sol.** Let the amounts be Rs. 100 and Rs. 200 respectively.The value of the 100 would become $100 \times 6/7 \times 6/7 = 3600/49 = 73.46$ The other person's investment of 200 would become $200 \times 1.2 \times 1.2 = 288$ The total value would become $288 + 73.46 = 361.46$

This represents approximately a 20% increase in the value of the amount after 2 year.

S15. Ans.(c)**Sol.**

Let C.P. of each desktop = Rs. 100x

Case I:

Total CP of 20 desktop = 2000x

$$\therefore \text{Total SP} = (1200x + 240x) + (800x + 80x) = 2320x$$

$$\therefore \text{Profit} = 2320x - 2000x = 320x$$

Case II:

$$\text{Profit} = 15\% \text{ of } 2000 = 300x$$

$$\text{Difference of profits} = 320x - 300x \rightarrow \text{Rs. } 36000$$

$$\therefore 100x = \text{CP of one desktop} = \frac{36000}{20} \times 100 = \text{Rs. } 1,80,000$$

S16. Ans.(a)**Sol.**

$$\frac{M_1 D_1 H_1}{W_1} = \frac{M_2 D_2 H_2}{W_2}$$

$$\Rightarrow \frac{4 \times 10 \times 5}{1} = \frac{2 \times 20 \times H_2}{2}$$

$$\Rightarrow H_2 = 10 \text{ hrs}$$

S17. Ans.(d)

Sol.

Let the price of B per kg be Rs. X. Then, the price of A per kg = Rs. 3X

1kg of C contains $\frac{2}{7}$ kg of A and $\frac{5}{7}$ kg of B

Price of 1 kg of C = $(\frac{2}{7}) \times 3X + (\frac{5}{7})X = (\frac{11}{7})X$

By the given condition, $\frac{11X}{7}$

= 5.20 - 0.80

= Rs. 4.40

$\Rightarrow X = 4.40 \times (\frac{7}{11}) = \text{Rs. } 2.80$

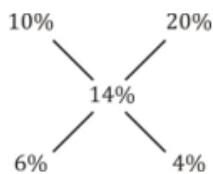
Hence the price of B per kg = Rs. 2.80.

S18. Ans.(c)

Sol.

Let amount invested at 20% per annum = x Rs.

By mixture and allegation method



Ratio of amount = 3 : 2

\therefore Total amount invested = $\frac{12000}{3} \times 5 = 20,000$ Rs.

S19. Ans.(c)

Sol.

Let the ratio of two original numbers be 1 : x.

$$\therefore \frac{1+1}{x+1} = \frac{R}{S}$$

$$\text{and } \frac{3}{x+2} = \frac{1}{2}$$

$$\Rightarrow x = 4$$

$$\text{So, } \frac{1}{x} = \frac{P}{Q} = \frac{1}{4}$$

\therefore Required sum = 5

S20. Ans.(c)

Sol.

$$M = 2S$$

$$S = 0.6 D$$

$$R = 0.5 V$$

$$V = 1.9 M$$

From these,

$$R = 0.5 \times 1.9 M = 0.95 M$$

$$V = 1.9 M$$

$$S = 0.5 M$$

$$D = \frac{10}{6} \times \frac{5}{10} M = \frac{5}{6} M$$

So, Shweta weighs least since Megha > Shweta.



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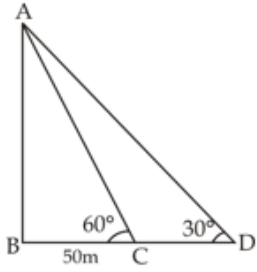
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500+ TOTAL TESTS

S21. Ans.(c)

Sol.

In $\triangle ABD$,



$$\tan 60^\circ = \frac{AB}{BD}$$

$$\sqrt{3} = \frac{AB}{50}$$

$$AB = 50\sqrt{3} \text{ m}$$

In $\triangle ABC$

$$\tan 30^\circ = \frac{AB}{BC}$$

$$\frac{1}{\sqrt{3}} = \frac{50\sqrt{3}}{BC}$$

$$BC = 150 \text{ m}$$

$$DC = 150 - 50 = 100 \text{ m}$$

$$\text{Speed of boat} = \frac{100 \text{ m}}{8 \text{ sec}}$$

$$= \frac{100}{8} \times \frac{18}{8} \text{ km/hr}$$

$$= 45 \text{ km/hr}$$

S22. Ans.(a)

Sol.

$$\frac{n_1}{n_2} = \frac{5}{6}$$

$$\frac{(n_1 - 2) \times 180}{n_1} = \frac{24}{25}$$

$$\frac{(n_1 - 2)}{(n_2 - 2)} \times \frac{n_2}{n_1} = \frac{24}{25}$$

$$\frac{(n_1 - 2)}{(n_2 - 2)} \times \frac{6}{5} = \frac{24}{25}$$

$$\frac{(n_1 - 2)}{(n_2 - 2)} = \frac{4}{5}$$

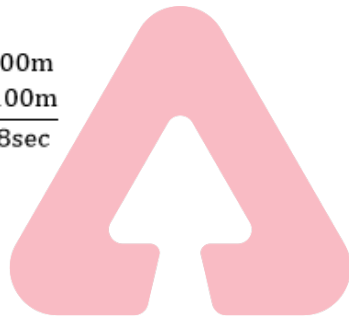
$$5n_1 - 10 = 4n_2 - 8$$

$$5n_1 - 4n_2 = 2$$

$$\frac{25n_2}{6} - 4n_2 = 2$$

$$n_2 = 12$$

$$n_1 = 10$$



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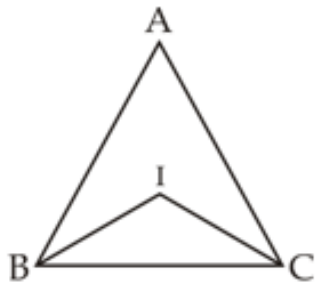
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S23. Ans.(b)

Sol.



$$\angle BAC = 180^\circ - (65 + 55^\circ)$$

$$= 180^\circ - 120$$

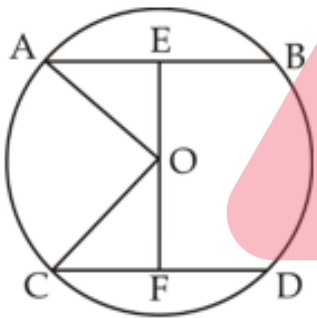
$$= 60^\circ$$

$$\angle BIC = 90 + \frac{\angle A}{2}$$

$$= 90 + 30 = 120^\circ$$

S24. Ans.(a)

Sol.



$$EO = x, OF = 17 - x$$

$$AB = 10$$

$$CD = 24$$

$$AE = 5 \text{ cm}$$

$$CF = 12$$

In $\triangle AOE$

$$AO^2 = 25 + x^2$$

In $\triangle COF$

$$CO^2 = 144 + (17 - x)^2$$

$$AO = CO = r$$

$$25 + x^2 = 144 + 289 + x^2 - 34x$$

$$34x = 144 + 289 - 25$$

$$x = 12$$

$$AO^2 = 25 + 144$$

$$AO^2 = 169$$

$$AO = 13 \text{ cm}$$

$$\text{Radius} = 13 \text{ cm}$$

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2020-21 Batch 2.0

Starts Dec 28, 2020

11 AM to 05 PM

S25. Ans.(b)

Sol.

$$\frac{\text{Run}_{10}}{10} = 60$$

$$\text{Run}_{10} = 600$$

$$\frac{\text{Run}_{11}}{11} = 62$$

$$\text{Run}_{11} = 682$$

$$\text{Run}_{10} + 11^{\text{th}} \text{ Inning} = 682$$

$$\begin{aligned} \text{Run required in 1th inning} &= 682 - 600 \\ &= 82 \end{aligned}$$

S26. Ans.(a)

Sol.

$$\text{Workers} \Rightarrow 15 : 11$$

$$\text{Wages} \Rightarrow 22 : 25$$

$$\text{Total wages} \Rightarrow 330 : 275$$

:

Ratio by which total wage of worker be decreased

$$= 330 : 275$$

$$= 6 : 5$$

S27. Ans.(b)

Sol.

$$\text{Interest on } \frac{1}{4} \text{ capital} = \frac{1}{4} \times \frac{3}{100}$$

$$= \frac{3}{400}$$

$$\text{Interest on } \frac{2}{3} \text{ capital} = \frac{2}{3} \times \frac{5}{100} = \frac{1}{30}$$

$$\text{Interest on } \frac{1}{12} \text{ capital} = \frac{1}{12} \times \frac{11}{100} = \frac{11}{1200}$$

$$\text{Total interest} = \frac{3}{400} + \frac{1}{30} + \frac{11}{1200}$$

$$= \frac{9 + 40 + 11}{1200}$$

$$= \frac{60}{1200} = \frac{1}{20}$$

% he receives on the whole

$$= \frac{1}{20} \times 100$$

$$= 5\%$$

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S28. Ans.(c)

Sol.

$$n_1^{t_1} = n_2^{t_2}$$

$$2^4 = 4^{t_2}$$

$$2^4 = 2^{2t_2}$$

$$\frac{1}{4} = \frac{2}{t_2}$$

$$t_2 = 8 \text{ years}$$

S29. Ans.(c)

Sol.

$$x \rightarrow \frac{1}{4} \text{ work} \rightarrow 6 \text{ days}$$

Whole work $\rightarrow 24$ days

$$y \rightarrow \frac{3}{4} \text{ work} \rightarrow 12 \text{ days whole work} \Rightarrow 16 \text{ days}$$

x & y will complete the whole work is

$$\Rightarrow \frac{1}{24} + \frac{1}{16}$$

$$\Rightarrow \frac{24 + 16}{24 \times 16}$$

$$\Rightarrow \frac{40}{24 \times 16}$$

$$\Rightarrow \frac{5}{48}$$

$$\text{Days required} = \frac{48}{5}$$

$$= 9\frac{3}{5} \text{ days}$$



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S30. Ans.(c)

Sol.

$$(2M + 3B) \times 10 = (3M + 2B) \times 8$$

$$20M + 30B = 24M + 16B$$

$$4M = 14B$$

$$M = \frac{7}{2}B$$

$$2M + 3B \Rightarrow 2 \times \frac{7}{2}B + 3B \Rightarrow 10B$$

$$2M + 1B \Rightarrow 2 \times \frac{7}{2}B + 1B \Rightarrow 8B$$

$$10B \times 10 = 8B \times \text{Days}$$

$$\text{Days} = \frac{100}{8}$$

$$= \frac{25}{2}$$

$$= 12\frac{1}{2} \text{ days}$$

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