

Quant Mega Quiz for SSC Tier-1 (Solutions)

S1. Ans.(a)

Sol.

Price $\Rightarrow 100 : 107$

Consumption $\Rightarrow 107 : 100$

$$\begin{aligned} \text{Reduction in consumption} &= \frac{7}{107} \times 100 \\ &= \frac{700}{107} \\ &= 6.54\% \end{aligned}$$

S2. Ans.(c)

Sol.

Let total number = x

$$\text{Purchases on credit} = \frac{31}{100}x$$

$$\text{Purchase on cash} = \frac{69}{100}x$$

$$\frac{69x}{100} - \frac{31x}{100} = 247$$

$$\frac{38x}{100} = 247$$

$$x = 650$$

S3. Ans.(b)

Sol.

	Old	:	New
Price \rightarrow	5	:	7
Consumption \rightarrow	7	:	5

$$\begin{aligned} \text{Reduction in consumption} &= \frac{2}{7} \times 100 = \frac{200}{7} \\ &= 28.56\% \end{aligned}$$

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S4. Ans.(b)

Sol.

$$\text{Total} \Rightarrow 180 + 150 = 330$$

$$50\% \text{ of Total} = 165$$

$$30\% \text{ of } 180 = \frac{30}{100} \times 180 = 54$$

$$\text{More Marks required} = 165 - 54 = 111$$

$$\% \text{ Marks} = \frac{111}{150} \times 100 = 74\%$$

S5. Ans.(b)

Sol.

$$18\% \rightarrow 450$$

$$100\% = \frac{450}{18} \times 100$$

$$= 2500$$

S6. Ans.(b)

Sol.

$$\text{Let no. of Boys} = x$$

$$\text{No. of Girls} = x \times 14\frac{2}{7}\%$$

$$= \frac{x}{7}$$

$$x + \frac{x}{7} = 560$$

$$\frac{8x}{7} = 560$$

$$x = 490$$

$$\text{No. of girls} = \frac{490}{7} = 70$$

S7. Ans.(c)

Sol.

$$\text{Savings} = \frac{10}{300} \times 750 = 25$$

$$\text{Required Month} = \frac{750}{25}$$

$$= 30 \text{ months}$$

S8. Ans.(a)

Sol.

Total marks

$$x \times \frac{40}{100} = 120$$

$$x = 300$$

$$\text{Scored} = 300 \times \frac{75}{100}$$

$$= 225$$

S9. Ans.(b)

Sol.

$$\frac{3}{4}x + 75 = x$$

$$75 = \frac{1}{4}x$$

$$x = 300$$

S10. Ans.(d)

Sol.

$$\text{Area of circle} = \pi r^2$$

$$\text{Area of sector} = \pi r^2 \times \frac{12}{360}$$

$$= \pi r^2 / 30$$

$$\% = \frac{\pi r^2 / 30}{\pi r^2} \times 100$$

$$= \frac{10}{3} \% = 3\frac{1}{3} \%$$

S11. Ans.(d)

Sol.

Let the length of train be x

$$x + 600 = 30 \times 30$$

$$x + 600 = 900$$

$$x = 300 \text{ m}$$

S12. Ans.(c)

Sol.

Akbar Sunit

100 110

$$\text{Required \%} = \frac{10}{110} \times 100 = 9\frac{1}{11} \%$$

S13. Ans.(a)

Sol. Let the Present age of Ramesh $\Rightarrow x$

And Ramesh's father $\Rightarrow y$

$$y - 10 = 4(x - 10)$$

$$y - 10 = 4x - 40$$

$$4x - y = 30 \quad \dots(i)$$

$$y + 10 = 2(x + 10)$$

$$y + 10 = 2x + 20$$

$$-2x + y = 10 \quad \dots(ii)$$

$$4x - y = 30$$

$$\underline{2x} = 40$$

$$x = 20$$

Age of Ramesh = 20 years

Original Income = 240,400 Rs.

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S14. Ans.(c)

Sol.

Let C.P $\rightarrow x$

Loss $\Rightarrow x/5$

$$x - \frac{x}{5} = 8000$$

$$\frac{4x}{5} = 8000$$

$$x = \text{Rs. } 10,000$$

S15. Ans.(d)

Sol.

Old Ratio $\rightarrow 3 : 5 \times 8$

New Ratio $\rightarrow 13 : 21 \times 2$

Old Ratio $\rightarrow 24 : 40$

New Ratio $\rightarrow 26 : 42$

$(26 - 24)r \rightarrow 20 \text{ Rs}$

$2r \rightarrow 20$

$1r \rightarrow 10 \text{ Rs}$

Original Income = 240, 400 Rs

S16. Ans.(d)

Sol.

Number of Hand Kerchief

$$= \frac{120 \times 96}{24 \times 24}$$

$$= 20$$

S17. Ans.(d)

Sol.

Profits Ratio

$$= 18000 \times 12 : 24000 \times 8$$

$$= 9 : 8$$

$$\text{Sunita's share} = 5100 \times 8/17$$

$$= 2400 \text{ Rs.}$$

S18. Ans.(c)

Sol.

Number $\Rightarrow 35 : 55 : 77$

Let the numbers are $35x, 55x, 77x$

H.C.F of Numbers = x

$$x = 24$$

Numbers are

$$35 \times 24, 55 \times 24, 77 \times 24$$

$$840, 1320, 1848$$

S19. Ans.(d)

Sol.

$$\begin{aligned} \text{Total volume} &= 569 + 1728 \\ &= 2297 \\ a^3 &= 2297 \\ a &\cong 13 \end{aligned}$$

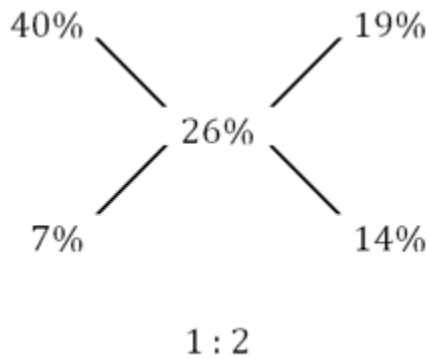
S20. Ans.(a)

Sol.

$$\begin{aligned} \text{Let principal} &= 100 \\ \text{Rate} &= 10\% \\ \text{C.I for 1}^{\text{st}} \text{ year} &= 10 \\ \text{C.I for 2}^{\text{nd}} \text{ year} &= 10 \\ \text{Total C.I} &= 21 \\ 121r &= 1815 \\ 1r &= 15 \\ 100r &\rightarrow 1500 \text{ Rs.} \end{aligned}$$

S21. Ans.(b)

Sol.



Part of whisky replaced is $\frac{2}{3}$

S22. Ans.(a)

Sol.

Let the C.P. of an item be x and no. of items be A .

$$\text{Total C.P.} = Ax$$

$$\begin{aligned} \text{Total S.P.} &= 1.2x \times \frac{A}{2} + \frac{4}{5} \times \frac{6}{5}x \times \frac{A}{4} + \frac{6}{10} \times \frac{6}{5} \times x \times \frac{A}{4} \\ &= \frac{3Ax}{5} + \frac{6Ax}{25} + \frac{9Ax}{50} \\ &= \frac{51Ax}{50} \\ &= 1.02Ax \\ \therefore & 2\% \text{ profit} \end{aligned}$$

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S23. Ans.(b)**Sol.** Time taken to complete whole work by

$$A = 4 \times 10 = 40 \text{ days}$$

$$\text{By B} = \frac{100}{40} \times 15 = 37 \frac{1}{2} \text{ days}$$

$$\text{By C} = 3 \times 13 = 39 \text{ days}$$

$$\text{By D} = 6 \times 7 = 42 \text{ days}$$

So, B can complete the work in least time

S24. Ans.(a)**Sol.** Monthly income of Sameer

$$= \frac{8.4}{12} \text{ lakh}$$

$$= 70000 \text{ Rs.}$$

$$\text{Spend on Rent} = 70000 \times \frac{1}{7}$$

$$= 10000$$

$$\text{Spend on Food} = (70000 - 10000) \times \frac{1}{6}$$

$$= 10000$$

Spend on (Coth + travel)

$$= (70000 - 20000) \times \frac{11}{20}$$

$$= 27500 \text{ Rs.}$$

Saving = 22500 Rs.

$$\text{Expend on travel} = 27500 \times \frac{8}{25}$$

$$= 8800$$

Required difference = $(22500 \times 12 - 8800 \times 12)$ Rs.

$$= (270000 - 105600) \text{ Rs.}$$

$$= 164400 \text{ Rs.}$$

S25. Ans.(c)**Sol.**

Let per kg price of Sugar initially was Rs. 100.

Then, total expenditure in a month was

$$100 \times 30 = 3000$$

After increase in price,

$$x \times 132 = \frac{110}{100} \times 3000, \text{ where } x$$

= new monthly consumption of family

$$\Rightarrow x = 25 \text{ kg}$$

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S26. Ans.(b)**Sol.**

Ratio between salaries of Mahesh and Suresh one year ago

$$\text{i. e. } \frac{M_L}{S_L} = \frac{3}{5}$$

also, ratio of Mahesh last year & present year salaries

$$\text{i. e. } \frac{M_L}{M_P} = \frac{2}{3} = \frac{2 \times \frac{3}{2}}{3 \times \frac{3}{2}} = \frac{3}{\frac{9}{2}} \quad \dots \text{(i)}$$

and, ratio of Suresh last year & present year salaries

$$\text{i. e. } \frac{S_L}{S_P} = \frac{4}{5} = \frac{4 \times \frac{5}{4}}{5 \times \frac{5}{4}} = \frac{5}{\frac{25}{4}} \quad \dots \text{(ii)}$$

From eqn i and ii,

$$\text{their present salary ratio} = \frac{\frac{9}{2}}{\frac{25}{4}} = \frac{18}{25}$$

$$\therefore 18x + 25x = 43000$$

$$\Rightarrow x = 1000$$

So, required present salary of Mahesh = $18 \times 1000 = \text{Rs. } 18000$ **S27. Ans.(b)****Sol.**Let the remaining provisions lasted for x days.

Then,

$$250 \times 35 = 250 \times 5 + 275 \times 10 + 250 \times x$$

$$\Rightarrow 350 = 50 + 110 + 10x$$

$$\Rightarrow x = 19 \text{ days.}$$

S28. Ans.(b)**Sol.**

$$r = \frac{10800 \times 100}{22500 \times 4} = 12\%$$

$$CI = 22500 \left(1 + \frac{12}{100}\right)^2 - 22500$$

$$= 22500 \times \frac{112}{100} \times \frac{112}{100} - 22500$$

$$= 28224 - 22500 = 5724$$

S29. Ans.(b)

Sol.

Total distance covered by cyclist = $22 \times 30 = 660$ km

Distance covered by wheel in 1 revolution

$$= 2 \times \frac{22}{7} \times \frac{70}{2} = 220 \text{ cm}$$

∴ Required number of revolutions

$$= \frac{660 \times 1000 \times 100}{220} = 3 \text{ lakh}$$

S30. Ans.(b)

Sol.

Ratio of profit of P, Q, and R.

3500 : 4500 : 5500

7 : 9 : 11

$$\Rightarrow 7x + 9x + 11x = 405$$

$$\Rightarrow 27x = 405 \Rightarrow x = 15$$

$$P\text{'s share} = 7x = 7 \times 15 = \text{Rs. } 105$$

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