

## Quant Mega Quiz for SSC CHSL (Solutions)

**S1. Ans.(b)**

**Sol.**

$$\begin{aligned} PA \times PB &= PC \times PD \\ 17 \times 6 &= (x + 4) \times 4 \\ 51 &= 2x + 8 \\ 2x &= 43 \\ x &= 21.5 \end{aligned}$$

**S2. Ans.(b)**

**Sol.**

$$\begin{aligned} \text{Loss} &= \frac{15}{100} = \frac{3}{20} \\ (20 - 3)r &\rightarrow 255000 \\ 17r &\rightarrow 255000 \\ 1r &\rightarrow 15000 \\ 20r &\rightarrow 300000 \\ \text{Selling Price} &= 300000 \times \frac{110}{100} = 330000 \text{ Rs} \end{aligned}$$

**S3. Ans.(c)**

**Sol.**

$$\begin{aligned} \frac{10 \times 10 \times x}{100} - \frac{6 \times 10 \times x}{100} &= 200 \\ x - \frac{3}{5}x &= 200 \\ x &= 500 \text{ Rs.} \end{aligned}$$

**S4. Ans.(a)**

**Sol.**


$$\text{Average speed} = \frac{20 \times 25 \times 2}{20 + 25} = \frac{200}{9}$$

**S5. Ans.(b)**

**Sol.**

$$\begin{aligned} \text{Shivali : Kishan} &= 125 : 100 = 5 : 4 \\ \text{Required \%} &= \frac{1}{5} \times 100 = 20\% \end{aligned}$$

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**S6. Ans.(b)****Sol.**

$$\frac{\text{Sum}_{10}}{10} = x$$

$$\text{Sum}_{10} = 10x$$

$$\frac{10x+77}{11} = x + 3$$

$$10x + 77 = 11x + 33$$

$$x = 44$$

$$\text{Average after 11}^{\text{th}} \text{ Inning} = 44 + 3 = 47$$

**S7. Ans.(a)****Sol.**Let, speed of faster train =  $S_1$  m/sSpeed of slower train =  $S_2$  m/s

$$S_1 - S_2 = \frac{130+110}{1 \times 60} = 4 \text{ m/s}$$

$$S_1 + S_2 = \frac{130+110}{3} = 80$$

$$S_1 = 42 \text{ m/s}$$

$$S_2 = 38 \text{ m/s}$$

**S8. Ans.(b)****Sol.** Obviously,,

$$(5M + 2B) = 4(1M + 1B)$$

$$\therefore M = 2B$$

$\therefore$  Work done by a man and a boy are in the ratio 2: 1.

**S9. Ans.(a)****Sol.**

$$(A + B)'s \text{ 1 day's work} = \frac{1}{30} + \frac{1}{50} = \frac{8}{150}$$

$$\therefore (A + C)'s \text{ 1 day's work} = \frac{1}{30} + \frac{1}{40} = \frac{7}{120}$$

$$\therefore \text{Work done in first two days} = \frac{8}{150} + \frac{7}{120} = \frac{67}{600}$$

$$\text{Work done in } 8 \times 2 = 16 \text{ days} = \frac{67 \times 8}{600} = \frac{67}{75}$$

$$\text{Work left} = 1 - \frac{67}{75} = \frac{8}{75}$$

On the 17th day, (A + B) will work and they will complete  $\frac{8}{150}$  work.

$$\therefore \text{Work left} = \frac{8}{75} - \frac{8}{150} = \frac{8}{150} = \frac{4}{75}$$

On the 18th day, (A + C) will work and they will finish it in  $\frac{120}{7} \times \frac{4}{75} = \frac{32}{35}$  days.

$\therefore$  The whole work will be done in  $17\frac{32}{35}$  days

**S10. Ans.(b)****Sol.** Total amount=  $120/100[80 \times 6.75 + 120 \times 8]=1800$ Now, required value=  $1800/200= 9$  Rs/kg

**S11. Ans.(b)****Sol.** Let the C.P of radios be x & y.

$$\text{S.P of one radio} = x \times \frac{120}{100}$$

$$\text{S.P of second radio} = y \times \frac{280}{300}$$

S.P of 1<sup>st</sup> radio = S.P of 2<sup>nd</sup> radio

$$x \times \frac{120}{100} = y \times \frac{280}{300}$$

$$x : y = 7 : 9$$

$$x + y = 1920$$

$$x = 1920 \times \frac{7}{16}$$

$$= 840$$

$$y = 1920 \times \frac{9}{16}$$

$$= 1080$$

**S12. Ans.(b)****Sol.**

$$5\% + 2\frac{1}{2}\% \rightarrow \text{Rs. } 12$$

$$5\% + \frac{5}{2}\% \rightarrow 12$$

$$\frac{15}{2}\% \rightarrow 12$$

$$1\% \rightarrow \frac{12 \times 2}{15}$$

$$100\% \rightarrow \frac{12 \times 2 \times 100}{15} \Rightarrow 160$$

**S13. Ans.(c)****Sol.**

	C.P	:	S.P
	100	:	112
10% loss	90	:	$90 \times \frac{130}{100}$
			= 117

Profit 30%

$$(117 - 112)r \rightarrow 5.75$$

$$5r \rightarrow 5.75$$

$$1r \rightarrow 1.15$$

$$100r \rightarrow 115 \text{ Rs.}$$

$$\text{C.P} \rightarrow 115$$

S.P at 20% profit

$$= 115 \times \frac{120}{100}$$

$$= \frac{1380}{10} = 138 \text{ Rs.}$$

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**S14. Ans.(a)**

**Sol.**

C.P	:	S.P
100	:	97.5
100	:	110

  
10% profit

$$(110 - 97.5)r = 100$$

$$12.5r \rightarrow 100$$

$$1r \rightarrow \frac{1000}{125}$$

$$1r \rightarrow 8 \text{ Rs.}$$

$$100r \rightarrow 800 \text{ Rs.}$$

$$\text{C.P} \Rightarrow 800$$

$$\text{S.P to gain } 12\frac{1}{2}\%$$


$$= 800 \times \frac{112.5}{100}$$

$$= 900 \text{ Rs.}$$

**S15. Ans.(c)**

**Sol.**

C.P	:	S.P
100	:	115
100	:	120

  
20% profit

$$(120 - 115)r \rightarrow 27$$

$$5r \rightarrow 27$$


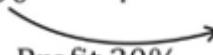
$$100r \rightarrow \frac{27}{5} \times 100$$

$$= 540 \text{ Rs.}$$

**S16. Ans.(c)**

**Sol.**

	C.P	:	S.P
	100	:	95
10% loss	90	:	$90 \times \frac{130}{100}$
			= 117

  
  
Profit 30%

$$(117 - 95)r \rightarrow 33 \text{ Rs.}$$

$$22r \rightarrow 33 \text{ Rs.}$$

$$1r \rightarrow \frac{33}{22}$$

$$100r \rightarrow \frac{3}{2} \times 100$$

$$\rightarrow 150 \text{ Rs.}$$

$$\text{C.P of article} \rightarrow 150 \text{ Rs.}$$

**S17. Ans.(c)**

**Sol.**

$$\text{C.P} \quad : \quad \text{M.P}$$

$$100 \quad : \quad 115$$

$$100 \quad : \quad 100 \times \frac{118}{100}$$

Profit 18%  $\rightarrow$  = 118

$$(118 - 115)r \rightarrow 18 \text{ Rs.}$$

$$3r \rightarrow 18 \text{ Rs.}$$

$$1r \rightarrow 6 \text{ Rs.}$$

$$100r \rightarrow 600 \text{ Rs.}$$

**S18. Ans.(c)**

**Sol.**

$$\text{C.P} \quad : \quad \text{S.P}$$

$$100 \quad : \quad 80$$

$$100 \quad : \quad 100 \times \frac{105}{100}$$

Profit 5%  $\rightarrow$  = 105

$$(105 - 80)r \rightarrow 100$$

$$25r \rightarrow 100$$

$$1r \rightarrow 4 \text{ Rs.}$$

$$100r \rightarrow 400 \text{ Rs.}$$

**S19. Ans.(a)**

**Sol.**

C.P of rice

$$= 54 \times \frac{100}{90}$$

$$= 60 \text{ Rs.}$$

S.P to earn 20%

$$= 60 \times \frac{120}{100}$$

$$= 72 \text{ Rs.}$$

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**S20. Ans.(b)**

**Sol.**

	C.P	:	S.P	
	100	:	120	
10% loss	90	:	$90 \times \frac{120}{100}$	
			= 108	

Profit 20%

$$(120 - 108)r \rightarrow 30 \text{ Rs.}$$

$$12r \rightarrow 30 \text{ Rs.}$$

$$100r \rightarrow \frac{30}{12} \times 100 \Rightarrow 250 \text{ Rs.}$$

**S21. Ans.(a)**

**Sol.**

$$\text{First polynomial} = 6x^3 + 60x^2 + 150x$$

$$= 6x(x^2 + 10x + 25) = 3 \times 2 \times x \times (x + 5)^2$$

$$\text{Second polynomial} = 3x^4 + 12x^3 - 15x^2$$

$$= 3x^2(x^2 + 4x - 5) = 3x^2(x^2 + 5x - x - 5) = 3x^2(x + 5)(x - 1)$$

$$\therefore \text{Required LCM} = 3 \times 2 \times x^2 \times (x + 5)^2 (x - 1) = 6x^2 (x + 5)^2 (x - 1)$$

**S22. Ans.(b)**

**Sol.**

$$\because x - k \text{ is a factor of } 2x^2 - kx - 9$$

$$\therefore 2k^2 - k^2 - 9 = 0$$

$$\therefore k = \pm 3$$

$$\text{But factor of } (x^2 + x - 12) \text{ are } (x + 4), (x - 3)$$

Hence value of k is 3.

**S23. Ans.(a)**

**Sol.**

$$\text{Required remainder} = 3(2y)^3 - 2(2y)^2 y - 13(2y)$$

$$y^2 + 10y^3 \text{ (using factor theorem)}$$

$$= 24y^3 - 8y^3 - 26y^3 + 10y^3 = 34y^3 - 34y^3 = 0$$

**S24. Ans.(d)**

**Sol.**

Let the numbers be x and y

$$2x + 3y = 36$$

$$3x + 2y = 39$$

$$4x + 6y = 72$$

$$9x + 6y = 117$$

$$\hline 5x = 45$$

$$\therefore x = 9$$

$$2 \times 9 + 3y = 36$$

$$y = \frac{36 - 18}{3} = 6$$

$\therefore$  Smaller number is 6

**S25. Ans.(d)**

**Sol.**

Let x and y be the numbers,

$$\therefore x + y = 20, x - y = 8$$

$$\Rightarrow x = 14, y = 6$$

$$x^2 - y^2 = 14^2 - 6^2$$

$$= (14 + 6)(14 - 6) \Rightarrow 20 \times 8 = 160$$



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