

CAT Quantitative Aptitude Questions for Practice Set 3 - Solutions

Difficulty Level - Medium

1. (b) : Vande Bharat takes 6 hours from New Delhi to Bhopal. Durgam takes 4 hours from Bhopal to New Delhi. Let the distance between Delhi and Bhopal be 'd' kms.

$$\text{Speed of Vande Bharat} = \frac{d}{6} \text{ km / hr}$$

$$\text{Speed of Durgam} = \frac{d}{4} \text{ km / hr}$$

$$\text{They will meet after} = \frac{d}{\frac{d}{6} + \frac{d}{4}} = 2\frac{2}{5} \text{ hours}$$

$$= 2 \text{ hours \& 24 minutes}$$

$$\text{Hence, required time} = (7 + 2.24)$$

$$= 9 : 24 \text{ a.m.}$$

2. (c) : Let the individual price of jeans be X and Y.

$$X + Y = 560.$$

Using the profit and loss percentages of the individual jeans:

$$1.15X + 0.9Y = 560.$$

Solving the two equations we get,

$$X = 224 \text{ and } Y = 336$$

3. (c) : Let x be the percentage of water in the resultant mixture.

Using the alligation rule, we have

$$\frac{30}{25} = \frac{(40 - x)}{(x - 20)}$$

$$6(x - 20) = 5(40 - x)$$

$$6x - 120 = 200 - 5x$$

$$11x = 320$$

$$x = \frac{320}{11} = 29.09\%$$

4. (c) : Ratio of efficiency of P & Q is 3 : 2.

Ratio of efficiency of Q & R is 5 : 4.

Ratio of efficiency of P, Q & R is 15 : 10 : 8

$$\text{Total work done} = 15 \times 11 = 165$$

$$\text{Time require by P, Q, R} = 165/33 = 5 \text{ days}$$

5. (c) : $A + B + C = 12540$ (1)

$$A = \frac{3}{7}(B + C)$$

$$\frac{A}{B + C} = \frac{3}{7}$$

$$\text{So, } A's \text{ Share} = \frac{3}{10} \cdot 12540 = 3762$$

$$B = \frac{2}{9} (A + C)$$

$$\frac{B}{A + C} = \frac{2}{9}$$

$$\text{So, } B's \text{ Share} = \frac{2}{11} \cdot 12540 = 2280$$

6. (a) : From the problem, we have

$$CP \cdot \frac{125}{100} = 360$$

$$CP = 72 \times 4 = \text{Rs. } 288$$

If the same item is sold for Rs. 260, there will be a loss of Rs. $288 - \text{Rs. } 260 = \text{Rs. } 28$

7. (c) : The digit sum of factorial of numbers till 5! is 9. 6! onwards each factorial will have digit sum as 9

8. (b) : In normal time rate = Rs. 6 per hour

During sale rates are increased by 50% i.e.,

$$\text{Rate 40-hour week} = 240 + 50\% \text{ of } 240 = \text{Rs. } 360$$

$$\text{Rate per hour} = \text{Rs. } 9 \text{ per hour}$$

Now, according to the question,

$$\text{Required commission} = 9 \times 60 = \text{Rs. } 540$$

9. (a) : We have $(A - 20) = 0.4(B + 20)$, i.e. $A - 0.4B = 28$

$$\text{And } (B - 40) = 0.4(A + 40), \text{ i.e. } B - 0.4A = 56$$

Solve these equation's we get $A = 60$ Rs.

10. (b) : We have to find last non zero digit by 4 so we will eliminate 0 in question so now it becomes $104^{723} = 4$ as $4^{\text{odd}} = 4$

11. (c) : Let A be the combined age of husband and wife n be the number of children and x is the average age of one child. Then

$$A = 6nx \quad \dots (1)$$

$$A - 4 = 10 [n(x - 2)] \quad \dots (2)$$

$$A + 12 = 3 [n(x + 6)] \quad \dots (3)$$

On solving the above equation, we get $n = 3$

12. (a) : Cost of material = 30% of 4000 = 1200

$$\text{New cost of material} = 1200 \cdot \frac{26}{100} = 1150$$

$$\text{Cost of manufacturing} = 2000 \cdot \frac{20}{100} = 2400$$

$$\text{So, new profit} = 4000 - (2400 + 1150) = 450$$

13. (c) : Total number of factors of factors of $756 = 2^2 \times 3^3 \times 7 = (2 + 1)(3 + 1)(1 + 1) = 24$

$$\text{So, total sets are } \frac{24}{2} = 12.$$

14. (a) : Let us suppose the income of man = Rs. 1000

Savings = 15% of 1000 = Rs. 150

Expenditure = 1000 – 150 = 850

New Income = $1.2 \times 1000 = 1200$

New Expenditure = $1.1 \times 850 = 935$

New Savings = $1200 - 935 = 265$

Required percentage = $\frac{265}{1200} \times 100 = 22.08\%$

15. (b) : If X be the distance, we have:

$$\frac{\frac{X}{3} + \frac{X}{3} + \frac{X}{3} + \frac{X}{2}}{\frac{10}{3} + \frac{9}{3} + \frac{8}{3} + \frac{60}{2}} = \frac{\frac{X}{2} + \frac{X}{2}}{\frac{10}{2} + \frac{8}{2}} \text{ or}$$

$X = 27$ km.

16. (d) : $4^{11} + 4^{12} + 4^{13} + 4^{14} + 4^{15}$

$$= 4^{11} (1 + 4^1 + 4^2 + 4^3 + 4^4) = 4^{11} \times 341.$$

The factors of 341 are: 1, 11, 31 and 341. Thus, we can say that the values in each of the three options would divide the expression.

17. (c) : When the number of cookies was divided into 8 parts or multiples of 8 parts, 2 were always left. So the number of cookies must be a multiple of $8 + 2$. Only 17 is not such a value

18. (c) : We have 4 men = 5 women 1 man = $\frac{5}{4}$ women, 2 women = 4 boys, 1 women = 2 boys $\frac{5}{4}$ women = $2 \times$

$$\frac{5}{4} \text{ boys} = \frac{5}{2} \text{ or } 1 \text{ man} = \frac{5}{4} \text{ women} = \frac{3}{2} \text{ boys}$$

Now $2M + 3W + 4B = 2 \times B + 3 \times 2B + 4B = 15 B$ Boys

Or 15 Boys do the work in 10 days (10 hectares) $6M + 4W + 7B = (6 \times + 4 \times 2 + 7) B = 30$

Boys 30 boys will do 16 hectares of work in 8 days.

19. (c) : Let speed of passenger train be x m/s.

$$\frac{66 + 88}{8.33 + x} = 0.168 \times 60$$

$$30 \times \frac{5}{18} = 8.33$$

$$x = 6.94 \text{ m/sec} = 25 \text{ kmph.}$$

20. (d) : $3515.2 - 3380 = 135.2 = \text{SI on Rs. 3380 for one year.}$

$$\text{By SI formula, } 135.2 = 3380 \times R \times \frac{1}{100} \text{ or } R = 4 \%$$

Now we have $3380 = P(1.04)^2$ or $P = \text{Rs. 3125}$