

51. (B) Required no. = HCF of $(38 - 2)$, $(45 - 3)$
and $(52 - 4)$
= HCF of 36, 42, 48 = 6

52.(C) Let the two digit number be $10x + y$.

Then, we have;

$$x + y = 8 \quad \dots (i) \text{ and}$$

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

$$\text{or, } x - y = \frac{54}{9} = 6 \quad \dots (ii)$$

From (i) & (ii),

$$x = \frac{8+6}{2} = 7 \text{ and } y = 1$$

\therefore The required number = $7 \times 10 + 1 = 71$

53.(D) $3^a = 729$ & $2^b = 1024$

$$\Rightarrow 3^a = 3^6 \quad \text{and} \quad 2^b = 2^{10}$$

$$\Rightarrow a = 6 \quad \text{and} \quad b = 10$$

Now,

$$\frac{4a+6b}{6b-3a} = \frac{4 \times 6 + 6 \times 10}{6 \times 10 - 3 \times 6} = \frac{24+60}{60-18} = \frac{84}{42} = 2$$

54.(D) Required percentage

$$= \frac{400}{400+200+800+100} \times 100 = 26.67\%$$

55.(A) $\frac{\text{son}}{\text{wife}} = \frac{3}{1}$; $\frac{\text{wife}}{\text{daughter}} = \frac{3}{1}$

$$\Rightarrow \text{son} : \text{wife} : \text{daughter} = 9 : 3 : 1$$

$$\text{son} - \text{daughter} = ₹ 10,000$$

$$\Rightarrow 9x - x = ₹ 10,000$$

$$\Rightarrow x = ₹ \frac{10,000}{8} = ₹ 1,250$$

Total property of the man

$$= 9x + 3x + x = 13x = 13 \times 1250 = ₹ 16,250$$

56.(A) Let the cost price of the book = ₹ 100

$$SP_1 = \frac{120}{100} \times 100 = ₹ 120$$

If he had bought it at 20% less

$$\Rightarrow CP = 80\% \text{ of } 100 = ₹ 80$$

$$\Rightarrow SP_2 = ₹ 80 \times \frac{125}{100} = ₹ 100$$

$$SP_2 - SP_1 = ₹ 20, CP = ₹ 100$$

$$SP_2 - SP_1 = ₹ 18, CP = \frac{100}{20} \times 18 = ₹ 90$$

57.(D) Let the cost price of goods be ₹ 100 and it is increased by $x\%$.

Then,

$$MP = ₹ (100 + x)$$

$$SP \text{ after } 10\% \text{ discount} = 90\% (100 + x)$$

$$SP \text{ at } 20\% \text{ profit} = 120\% \text{ of } 100$$

$$\therefore 90\% (100 + x) = 120\% \text{ of } 100$$

$$x = \frac{120 \times 100}{90} - 100 = \frac{100(120 - 90)}{90}$$

$$= \frac{100 \times 30}{90} = 33\frac{1}{3}\%$$

58. (B) Number of each type of coin

Total amount

$$= \frac{\text{Sum of values of each type of coins}}{\text{Total amount}}$$

$$= \frac{35}{1 + 0.5 + 0.25} = \frac{35}{1.75} = 20$$

59. (A) Copper in 1st alloy = $\frac{5}{7}$

$$\text{Copper in 2nd alloy} = \frac{3}{7}$$

Copper in (1st + 2nd) alloy

$$= \frac{1}{1+1} = \frac{1}{2}$$

By alligation rule,

$$= \frac{q_I \text{ alloy}}{q_{II} \text{ alloy}} = \frac{\frac{1}{7} - \frac{3}{7}}{\frac{7}{7} - \frac{3}{7}} = \frac{\frac{14}{7} - \frac{10}{7}}{\frac{10-7}{7}} = \frac{4}{3}$$

So, quantity of 1st alloy

$$= \frac{q_I}{q_I + q_{II}} \times 28$$

$$= \frac{1}{4} \times 28 = 7\text{kg}$$

Quantity of 2nd alloy

$$= 28 - 7 = 21\text{ kg}$$

60. (D) Length of the train (when there were 12 boggies) = $12 \times 15 = 180\text{ m}$

$$\text{Its speed} = \frac{180}{18} = 10\text{ m/s}$$

New length of the train (when two boggies are detached)

$$= 10 \times 15 = 150\text{ m}$$

Now, time taken by the train to cross

$$\text{telegraph post} = \frac{150}{10} = 15\text{ seconds}$$

Note:- If you face any problem regarding result or marks scored, please contact 9313111777

Note:- If your opinion differs regarding any answer, please message the mock test and question number to 8860330003