

15) Total marks secured = 125

Failed by 15 marks

∴ Pass marks = 125 + 15 = 140

Let maximum marks = x

$$\therefore \frac{x \times 35}{100} = 140$$

$$\Rightarrow x = \frac{140 \times 100}{35} = 4 \times 100 = 400$$

Hence maximum marks = 400.

16) Total question = 150

Johan got correct answers = 80%.

Mohan got correct answers = 64%.

(i) Number of correct answers got by Johan.

$$= \frac{80}{100} \times 150 = 120$$

Number of correct answers got by Mohan

$$= \frac{64}{100} \times 150 = \frac{64}{4} \times 6 = 96$$

(ii) Percentage of Mohan correct answers to Johan's correct answers

$$= \frac{96}{120} \times 100 = \frac{4}{5} \times 100 = 4 \times 20 = 80\%$$

17) The resulting number
= The original number $\times \left(1 + \frac{20}{100}\right) \times \left(1 - \frac{20}{100}\right)$

$$= 8000 \times \frac{120}{100} \times \frac{80}{100} = ₹ 6,400$$

18) The resulting number
= The original number $\times \left(1 - \frac{25}{100}\right) \times \left(1 + \frac{25}{100}\right)$

$$= 12000 \times \frac{75}{100} \times \frac{125}{100} = 11,250$$

19) ~~The~~ Let the original cost = ₹ 100

Increase = 20%

$$\therefore \text{New cost} = 100 + 20 = ₹ 120$$

$$\text{Decreased by } 30\% = \frac{120 \times 30}{100} = ₹ 36$$

$$\therefore \text{New cost} = 120 - 36 = ₹ 84$$

$$\text{Overall change} = 100 - 84 = ₹ 16$$

$$\text{Required percentage} = \frac{16}{100} \times 100 = 16\% \text{ decrease.}$$

20) Let the original cost = ₹ 100

Decreased by 25%

$$\therefore \text{New cost} = 100 - 25 = ₹ 75$$

Decreased by 40%

$$= \frac{75 \times 40}{100} = ₹ 30$$

$$\therefore \text{New cost} = ₹ 75 - ₹ 30 = ₹ 45$$

$$\text{Overall change} = 100 - 45 = ₹ 55$$

$$\text{Required percentage} = \frac{55}{100} \times 100 = 55\% \text{ decrease.}$$