15. In an examination, a candidate secured 125 marks and failed by 15 marks. If the pass percentage was 35%; find the maximum marks.

Ans. Total marks secured = 125

Failed by 15 marks

Pass marks = 125 + 15 = 140

Let maximum marks = x

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

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

Hence, maximum marks = 400.

16. In an objective type paper of 150 questions, John got 80% correct answers and Mohan got 64% correct answers.

(i) How many correct answers did each get?

(ii) What percent is Mohan's correct answers to John's correct answers?

Ans:

Total questions = 150

John got correct answers = 80%

Mohan got " " = 64%

(i) No of correct answers got by John

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

No of correct answers got by Mohan

$$= \frac{64}{100} \times 150 = \frac{16}{4} \times 6 = 96$$

(ii) % of Mohan's correct answer to John's correct answer.

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

13. The number 8,000 is first increased by 20% and then decreased by 20%. Find the resulting number.

Ans: The resulting number = The original number

$$8000 \times \left(1 + \frac{20}{100}\right) \times \left(1 - \frac{20}{100}\right)$$

$$= 8000 \times \left(\frac{100+20}{100}\right) \times \left(\frac{100-20}{100}\right)$$

$= 8000 \times \frac{128}{100} \times \frac{80}{100}$

$= 80 \times 12 \times 8$

$= 7680$

18. The number 12,000 is first decreased by 25% and then decreased by 25%. Find the resulting number.

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

$= 12000 \times \left(\frac{100-25}{100}\right) \times \left(\frac{100+25}{100}\right)$

$= 12000 \times \frac{75}{100} \times \frac{125}{100}$

$= 11,250$

19. The cost of an article is first increased by 20%, and then decreased by 30%. Find the percentage change in the cost of the article.

Sol. Let the original cost = ₹100

Increased by 20%

New cost = 100 + 20 = ₹120

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

New cost = 120 − 36 = ₹84

Overall change = 100 − 84 = ₹16

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

20. The cost of an article is first decreased by 25% and then further decreased by 40%. Find the percentage change in the cost of the article.

Sol. Let the original cost = ₹100

Decreased by 25%

New cost = 100 − 25

= ₹ 75

Decreased by 40% = $\frac{75 \times 40}{100}$ = ₹ 30

New cost = ₹ 75 − ₹ 30 = ₹ 45

Overall change = 100 − 45 = ₹ 55

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