A manufacturer makes 750 articles at a cost of 60 paise per article. He fixes the selling price such that if only 600 articles are sold, he would make a profit of 40% on his outlay. However, he sold 630 articles at this price. Find his actual profit per cent as a percentage of the total outlay assuming that the unsold articles are useless.

Solution

C.P. of 750 articles at the rate of 60 paise per article is

$$Rs \left(750 \cdot \frac{60}{100} \right) = Rs\ 450.$$

Required profit is 40% of his outlay assuming that only 600 articles are sold.

S.P. of 600 articles is

$$\frac{100 + 40}{100} \cdot Rs\ 450 = Rs\ 630.$$

S.P. of 1 article is $Rs\ \frac{630}{600}$.

He actually sells 630 articles.

S.P. of 630 articles is $630 \cdot Rs\ \frac{630}{600} = Rs\ 661.50.$

Actual profit is $Rs\ 661.50 - Rs\ 450 = Rs\ 211.50.$

$$\text{Actual profit \%} = \frac{Profit}{C.P.} \cdot 100\% = \frac{211.50}{450} \cdot 100\% = 47\%.$$

Answer: 47%.