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CAT Profit And Loss, Discount Formulas

• Profit, Loss and Discount is a very important topic for CAT and a significant number of questions are asked from this topic every year.

• The number of concepts in these topics is limited and most of the problems can be solved by applying the formulae directly.

• This PDF covers various formulas, tips and shortcuts of Profit, Loss and Discount topics.

Profit ,Loss & Discount:

Cost Price:

The amount paid to purchase an article or the cost of manufacturing an article is called Cost Price (C.P)

Selling Price:

The price at which a product is sold is called Selling price (S.P)

Marked Price:

The price at which an article is marked is called Marked price (M.P)

➔ If S.P > C.P, then

Profit or Gain, P = Selling Price (S.P) – Cost Price (C.P)

% Profit or Gain percentage = $\frac{Profit}{C.P} \times 100$

➔ If C.P > S.P, then Loss, L = C.P – S.P,

% Loss or Loss Percentage = $\frac{Loss}{C.P} \times 100$

➔ Discount = Marked Price (M.P) – Selling Price (S.P)

(If no discount is given, then M.P = S.P)

➔ %Discount = $\frac{Discount}{M.P} \times 100$

➔ Total increase in price due to two subsequent increases of X% and Y% is $\left(X + Y + \frac{XY}{100}\right)\%$

➔ If two items are sold at same price, each at Rs. x, one at a profit of P% and other at a loss of P% then there will be overall loss of $\frac{P^2}{100}\%$

The absolute value of loss = $\frac{2P^2x}{100^2 - P^2}$

➔ If C.P of two items is the same, and by selling each item he earned p% profit on one article and p% loss on another, then there will be no loss or gain.

➔ If a trader professes to sell at C.P but uses false weight, then Gain% = $\frac{Difference}{True\ Weight} \times 100\%$

Difference represents the difference in claimed weight and true weight ; claimed weight > true weight

- ➔ S.P $= \left(\frac{100 + Profit\%}{100}\right)$ C.P (if S.P > C.P)
- ➔ S.P $= \left(\frac{100 + Loss\%}{100}\right)$ C.P (if S.P < C.P)
- ➔ C.P $= \left(\frac{100 \times S.P}{100 + Profit\%}\right)$ C.P (if S.P > C.P)
- ➔ C.P $= \left(\frac{100 \times S.P}{100 + Profit\%}\right)$ C.P (if S.P > C.P)

➔ Buy x get y free, then the %discount $= \frac{y}{x+y} \times 100$

(here x+y articles are sold at C.P of x articles.)

➔ When there are two successive discounts of a% and b% are given then the,

Resultant discount $= \left(a + b - \frac{a \times b}{100}\right)$

➔ If C.P of x article is equal to the selling price of y articles then the,

Resultant profit % or loss % $= \frac{y-x}{y} \times 100$