

Tips, Formulae and shortcuts for Profit, Loss and Discount

By

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Cracku Tip 1 – Profit, Loss and Discount

- Profit, Loss and Discount is very important topic for CAT and 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 document covers various formulas, tips and shortcuts of Profit, Loss and Discount topic.

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Cracku Tip 2 – Profit, Loss and 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)

Cracku Tip 3 – Profit, Loss and Discount

- If $S.P > C.P$, then Profit or Gain, $P = S.P - C.P$
- If $C.P > S.P$, then Loss, $L = C.P - S.P$
- % Profit or Gain percentage or Profit Percentage = $\frac{\text{Profit}}{C.P} \times 100$
- %Loss = $\frac{\text{Loss}}{C.P} \times 100$
- Discount = $M.P - S.P$ (If no discount is given, then $M.P = S.P$)
- %Discount = $\frac{\text{Discount}}{M.P} \times 100$

Cracku Tip 4 – Profit, Loss and Discount

- Total increase in price due to two subsequent increases of X% and Y% is $(X + Y + \frac{XY}{100})\%$
- 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 $\frac{P^2}{100}\%$

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

Cracku Tip 5 – Profit, Loss and Discount

- If C.P of two items is same, and by selling of 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

$$\text{Gain\%} = \frac{\text{Error}}{\text{True value} - \text{Error}} \times 100$$

Cracku Tip 6 – Profit, Loss and Discount

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

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Cracku Tip 7 – Profit, Loss and Discount

- 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,

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

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

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

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Cracku Tip 6 – Quadratic Equations

- Minimum and maximum values of $ax^2+bx+c = 0$
- If $a > 0$: minimum value = $\frac{4ac-b^2}{4a}$ and occurs at $x = -b/2a$
- If $a < 0$: maximum value = $\frac{4ac-b^2}{4a}$ and occurs at $x = -b/2a$

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