Hi everyone!

Profit and Loss is one of the most important and frequently asked topics in the Quantitative Aptitude section of the SSC CGL Tier 1 exam. This topic not only strengthens your conceptual understanding but also helps in solving many real-life problems related to trade and transactions. Mastering the concept of Profit and Loss can significantly boost your overall score in the exam.

Let's begin our study with the basics and gradually move towards solving exam-level questions!

To understand Profit and Loss, we first need to revisit the concept of Percentage Increase and Decrease — but with a slightly different perspective.

Profit and Loss - Percentage Increase or Decrease

This is a key concept in solving profit and loss problems.

It refers to the ratio (expressed as a percentage) of the actual increase or decrease in a quantity relative to its original value.

Percentage Increase = (Actual Increase / Original Quantity) × 100

Percentage Decrease = (Actual Decrease / Original Quantity) × 100

Example:

A family's rice consumption increases from 60 kg/month to 75 kg/month.

Actual increase = 75 - 60 = 15 kg

Percentage increase = (15 / 60) × 100 = 25%

Now that we understand percentage change, let's move on to Profit and Loss.

Basic Profit and Loss Concepts

Let's look at a simple example to understand how profit and loss is calculated in a trade.

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Example 1: Profit

A man buys an article for Rs. 300 and sells it for Rs. 900.

Profit = Selling Price (SP) - Cost Price (CP)

⇒ Profit = 900 - 300 = Rs. 600

Example 2: Loss

Aman buys an article for Rs. 900 and sells it for Rs. 300.

Loss = CP - SP

⇒ Loss = 900 - 300 = Rs. 600

Profit and Loss - Key Terminologies

- Cost Price (CP): The price at which an article is bought or produced.
- Selling Price (SP): The price at which the article is sold.
- Profit: If SP > CP, then Profit = SP - CP
- Loss: If CP > SP, then Loss = CP - SP

Whenever an article is sold, there is either a profit or a loss depending on the difference between the selling price and the cost price.

Profit and loss - Formulas

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In everyday life, we usually talk about profit and loss in percentage terms, not just the absolute amount. For example, we see offers like “15% off” or “20% sale.” Understanding profit/loss as a percentage helps compare deals and assess trade value more effectively.

Profit/Loss Percentage Formula:

Profit/Loss (%) = [(Selling price - Cost price) × 100] / Cost price = [(SP - CP) × 100]/CP

- If SP - CP > 0, it's a Profit
- If SP - CP < 0, it's a Loss

Note: Profit and loss is always calculated on the cost price (CP) unless the question says otherwise.

Example 1: Calculating Profit Percentage

Q: A person buys a toy for Rs. 50 and sells it for Rs. 75. What is the profit percentage?
A:

SP = Rs. 75, CP = Rs. 50

Profit = SP - CP = 75 - 50 = Rs. 25

Profit (%) = (25 / 50) × 100 = 50%

Example 2: Finding the Selling Price

Q: Find the selling price if the cost price is Rs. 80 and the profit is 20%.
A:
We use the formula:

SP = (100 + Profit %/100) × CP = (100 + 20/100) × 80 = 1.2 × 80 = Rs. 96

Profit and Loss - Rearranged Formulas (Derived from the Main Formula)

- When there is Profit:

SP = (100 + Gain%/100) × CP

- When there is Loss:

SP = (100 − Loss%/100) × CP

- Finding CP from SP and Gain/Loss:

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CP = 100/(100 + Gain%) × SP (for profit)

CP = 100/(100 − Loss%) × SP (for loss)

These formulas are just rearrangements of the original formula and don't need to be memorized.

Example 3: Effective Profit When Quantity Is Reduced

Q: The MRP of a 1 kg salt packet is Rs. 33, set to earn a 50% profit. The shopkeeper sells it for Rs. 27.50 but removes 250 g from each packet. What is the effective profit percentage?

Solution:

CP (based on 50% profit):

CP = 100/(100 + 50) × 33 = 100/150 × 33 = Rs.22

Quantity sold = 750 g

CP of 750 g = 0.75 × 22 = Rs. 16.5

SP of 750 g = Rs. 27.5

Effective Profit (%) = (27.5 - 16.5)/16.5 times 100 = 66.67%

The concepts of Profit and Loss are not only vital for SSC CGL Tier 1 but also form the basis for several other topics in Quantitative Aptitude. We hope this study guide has helped you build a strong foundation. Keep practicing consistently with our Topic-wise tests, PYQs and stay connected with us for more exam-focused notes and problem-solving strategies!

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