SSC GD Constable Exam: Discount Syllabus Summary

Overview:
The Discount topic is a key component of the Mathematics section in the SSC GD Constable Exam, contributing approximately 2–3 questions (4–6 marks out of 160 total marks) in the Computer-Based Examination (CBE). The syllabus focuses on understanding and calculating discounts, marked price (MP), selling price (SP), and their relationships, along with applications in real-world scenarios like shopping and pricing. Questions test computational accuracy, formula application, and problem-solving skills at a 10th-grade level. The exam includes 80 questions (2 marks each, 0.50 negative marking per wrong answer) to be completed in 60 minutes.

Key Topics in Discount:
1. Basic Concepts: Marked Price (MP), Selling Price (SP), and Discount.
2. Discount Calculations: Determining discount amount and discount percentage.
3. Successive Discounts: Calculating the net effect of multiple discounts.
4. Relationship with Profit and Loss: Understanding how discounts affect selling price and profitability.
5. Word Problems: Real-world applications involving discounts (e.g., sale prices, shopping scenarios).
6. Equivalent Discount: Finding a single discount equivalent to multiple discounts.
7. Marked Price Calculations: Determining MP given SP and discount percentage.
8. Applications: Problems involving discounts in commerce and pricing strategies.

Important Formula and Techniques:
1. Basic Definitions:
   - Marked Price (MP): The listed price of an item before any discount.
   - Selling Price (SP): The price at which an item is sold after applying a discount.

- Discount = MP − SP.
- Discount % = [(MP − SP) / MP] × 100.
  - Example: MP = ₹200, SP = ₹160, Discount = 200 − 160 = ₹40, Discount % = (40 / 200) × 100 = 20%.

2. Selling Price Calculation:
  - SP = MP × (1 − Discount%/100).
  - Example: MP = ₹500, Discount % = 10%, SP = 500 × (1 − 10/100) = 500 × 0.9 = ₹450.

3. Marked Price Calculation:
  - MP = SP / (1 − Discount%/100).
  - Example: SP = ₹450, Discount % = 10%, MP = 450 / (1 − 10/100) = 450 / 0.9 = ₹500.

4. Discount Amount:
  - Discount = MP × (Discount%/100).
  - Example: MP = ₹200, Discount % = 20%, Discount = 200 × (20/100) = ₹40.

5. Successive Discounts:
  - For two successive discounts d_1% and d_2%, net discount % = $d_1 + d_2 - (d_1 \times d_2) / 100$.
  - Example: Discounts 10% and 20%, Net discount % = 10 + 20 − (10 × 20) / 100 = 30 − 2 = 28%.
  - SP after successive discounts = MP × (1 − d_1/100) × (1 − d_2/100).
  - Example: MP = ₹100, discounts 10% and 20%, SP = 100 × (1 − 10/100) × (1 − 20/100) = 100 × 0.9 × 0.8 = ₹72.

6. Equivalent Single Discount:
  - For successive discounts d_1% and d_2%, equivalent discount % = $d_1 + d_2 - (d_1 \times d_2) / 100$.
  - Example: Discounts 10% and 20%, Equivalent discount = 28% (as calculated above).

7. Word Problem Applications:
   - Example (Discount): An item with MP ₹1000 is sold at 15% discount. SP = 1000 × (1 − 15/100) = 1000 × 0.85 = ₹850.
   - Example (Successive Discounts): MP = ₹500, successive discounts 20% and 10%, SP = 500 × (1 − 20/100) × (1 − 10/100) = 500 × 0.8 × 0.9 = ₹360.
   - Example (Finding MP): SP = ₹400, Discount % = 20%, MP = 400 / (1 − 20/100) = 400 / 0.8 = ₹500.

8. Discount and Profit/Loss Connection:
   - SP = MP × (1 − Discount%/100).
   - Profit % = [(SP − CP) / CP] × 100, where CP is cost price.
   - Example: MP = ₹200, Discount % = 10%, CP = ₹150, SP = 200 × (1 − 10/100) = ₹180, Profit % = [(180 − 150) / 150] × 100 = 20%.

Key Points for SSC GD Preparation:
- Focus Areas: Calculating discount amounts, successive discounts, marked price, and solving word problems (e.g., sale prices, discounts) are frequently tested.
- Question Types: Direct discount calculations (e.g., SP after 20% discount on ₹500), successive discount problems, finding MP or discount %, and word problems (e.g., final price after discounts).
- Difficulty Level: 10th-grade level, requiring accurate formula application and quick calculations.
- Practice Tips: Memorize discount and successive discount formulas, practice word problems involving shopping scenarios, and solve past SSC GD papers to improve speed and accuracy.

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