GRADE: 7

SUBJECT: Mathematics SUBJECT: Percentage and Its Applications (Section 7.3 and 7.4)
DURATION: 2½ hrs
MAX MARKS: 80

DETAILED ANSWERS

SECTION A (4 × 10 = 40 marks)

1. Choose the correct option:

a) Loss Percentage:

- Loss % = [(C.P. - S.P.) / C.P.] × 100
- Loss % = [(120 - 100) / 120] × 100 = (20 / 120) × 100 = **16.67%**
- **Correct Answer:** (i) 10%

b) Simple Interest Calculation:

- S.I. = (P × R × T) / 100
- S.I. = (6000 × 8 × 1) / 100 = **480**
- **Correct Answer:** (ii) ₹480

c) Percentage Increase:

- Percentage increase = [(New - Old) / Old] × 100
- = [(30,000 - 24,000) / 24,000] × 100 = (6,000 / 24,000) × 100 = **25%**
- **Correct Answer:** (iii) 25%

2. Solve the following:

a) Profit Calculation:

- Profit = Selling Price (S.P.) - Cost Price (C.P.)
- = 874 - 760 = **114**

- Profit % = (Profit / C.P.) × 100 = (114 / 760) × 100 = **15%**

b) Loss Calculation:

- Loss = C.P. - S.P. = 2500 - 2300 = **200**
- Loss % = (Loss / C.P.) × 100 = (200 / 2500) × 100 = **8%**

c) Cost Price Calculation:

- Loss = C.P. - S.P.
- C.P. = S.P. + Loss = 3906 + 294 = **₹4200**
- Loss % = (Loss / C.P.) × 100 = (294 / 4200) × 100 = **7%**

3. Solve the following equations:

a) **Damaged Garments Loss:**

- Loss % = 8%
- C.P. = (S.P. × 100) / (100 - Loss %)
- C.P. = (7360 × 100) / (100 - 8) = (736000 / 92) = **₹8000**

b) **Table Loss & Gain Calculation:**

- Loss % = 12%
- C.P. = (S.P. × 100) / (100 - Loss %)
- C.P. = (3168 × 100) / (100 - 12) = (316800 / 88) = **₹3600**
- Selling at 3870:
- Profit/Loss % = [(3870 - 3600) / 3600] × 100 = (270 / 3600) × 100 = **7.5% gain**

4. State TRUE or FALSE:

a) **TRUE** (S.I. = 5600 × 8 × 1 / 100 = 448)

b) **TRUE**

c) **TRUE** (Cost price = (320 × 100) / (100 - 20) = 400)

d) **TRUE** (135% = 1.35 in decimals)

5. Solve the following problems:

a) **Simple Interest Calculations:**

- **₹350 at 11% for 2 years:**
- S.I. = (350 × 11 × 2) / 100 = **₹77**
- **₹20,000 at 8.5% for 4 years:**
- S.I. = (20,000 × 8.5 × 4) / 100 = **₹6,800**

b) **Future Value Calculation:**

- Amount = Principal + Interest
- Interest = (6000 × 8% × 3) / 100 = 1440
- New rate: 10%
- Interest at 10% = (6000 × 10% × 3) / 100 = 1800
- Future amount = 6000 + 1800 = **₹7800**

SECTION B (4 × 10 = 40 marks)

6. Graph-Based Question:

Graph drawn separately

- **Highest discount:** Clothing (20%)

7. Selling Price and Cost Price Calculations:

a) **Loss Calculation:**

- Loss % = 9%
- C.P. = (S.P. × 100) / (100 - Loss %)
- C.P. = (4825 × 100) / 91 = **₹5300**

b) **Selling Price Calculation:**

- Loss % = 10%
- S.P. = C.P. × (100 - Loss%) / 100

- S.P. = 120 × (90 / 100) = **₹108**

8. Simple Interest Problems:

a) **Time Calculation:**

- Time = (S.I. × 100) / (P × R)
- Time = (200 × 100) / (2500 × 4) = **2 years**

b) **Principal Calculation:**

- Principal = (S.I. × 100) / (R × T)
- Principal = (3840 × 100) / (16 × 2.5) = **₹9600**

9. Application-Based Questions:

a) **Medha's Original Money Calculation:**

- Remaining after bank deposit: 80%
- Remaining after spending: 80% × 80% = 64%
- 64% = 48,000
- Original money = (48,000 × 100) / 64 = **₹75,000**

b) **Amount to be returned:**

- S.I. = (4,800 × 5 × 2) / 100 = 480
- Total Amount = **₹5280**

10. HOTS:

a) **Tripled Investment Calculation:**

- A = 3P
- A = P + S.I.
- S.I. = 2P
- (2P = P × R × 6) / 100
- R = 33.33%

b) **Alcohol Solution Calculation:**

- Required Alcohol = **100 mL**

c) **Cost Price Calculation:**

- C.P. = **₹500**

END OF SOLUTIONS