Case Study 6

The district sports committee is organizing a regional championship to encourage young athletes. To prepare for the event, the committee purchased sports kits for two main categories: Cricket and Football. The total number of participants is 400. The ratio of students participating in Cricket to those in Football is $3 : 2$. To maintain the quality of the event, the committee decided that 15% of the total participants would receive "Elite Athlete" scholarships based on their trial performance.

For the equipment, the committee bought 100 high-quality cricket bats at a wholesale price of 1,500 rupees each. They sold 80 of these bats to local clubs at a profit of 20%, but the remaining bats were sold at a discount, resulting in a loss of 10% due to minor storage wear. Furthermore, the committee secured a sponsorship loan of 2,00,000 rupees to upgrade the stadium lighting. The loan was taken at a simple interest rate of 12% per annum for a period of 9 months. The treasurer needs to analyze the participant distribution, the total scholarship count, and the final financial outcome of the equipment sale to prepare the annual sports report.

MCQ Questions

1. How many students are participating in the Football category?

    (a) 240
    (b) 160
    (c) 200
    (d) 180

    Answer: (b) 160
    Solution: Total participants = 400. Ratio of Cricket to Football = $3 : 2$. Total parts = $3 + 2 = 5$. Number of Football participants = $\frac{2}{5} \times 400 = 2 \times 80 = 160$.

2. How many participants will receive the "Elite Athlete" scholarship?

    (a) 45
    (b) 50
    (c) 60
    (d) 75

    Answer: (c) 60
    Solution: Scholarship count = 15% of 400 = $\frac{15}{100} \times 400 = 15 \times 4 = 60$.

3. What was the selling price of one cricket bat when sold at a 20% profit?

    (a) 1,800 rupees
    (b) 1,700 rupees
    (c) 1,650 rupees
    (d) 1,900 rupees

    Answer: (a) 1,800 rupees
    Solution: Profit = 20% of 1,500 = $\frac{20}{100} \times 1500 = 300$. Selling Price = Cost Price + Profit = $1500 + 300 = 1,800$ rupees.

4. Calculate the simple interest to be paid on the sponsorship loan of 2,0,000 rupees for 9 months at 12% per annum.

(a) 24,000 rupees

(b) 12,000 rupees

(c) 18,000 rupees

(d) 20,000 rupees

Answer: (c) 18,000 rupees

Solution: $P = 2,00,000$, $R = 12\%$, $T = 9$ months $= \frac{9}{12} = 0.75$ years. S.I. $= \frac{P \times R \times T}{100} = \frac{200000 \times 12 \times 0.75}{100} = 2000 \times 9 = 18,000$ rupees.

5. What is the total profit or loss made on the sale of all 100 cricket bats?

(a) Profit of 21,000 rupees

(b) Profit of 24,000 rupees

(c) Loss of 3,000 rupees

(d) Profit of 18,000 rupees

Answer: (a) Profit of 21,000 rupees

Solution:

Total C.P. $= 100 \times 1500 = 1,50,000$.

S.P. of 80 bats (20% profit) $= 80 \times 1800 = 1,44,000$.

S.P. of 20 bats (10% loss on $1500 = 1350$) $= 20 \times 1350 = 27,000$.

Total S.P. $= 1,44,000 + 27,000 = 1,71,000$.

Net Profit $= 1,71,000 - 1,50,000 = 21,000$ rupees.