

CHAPTER SIX

PERCENTAGES AND BUSINESS MATHEMATICS

(Q1) Olu bought a radio for ₦65,000.00. After one year, the radio was valued 75% of the cost price.

(a) Find the value of the radio after one year.

(b) If the radio was sold for ₦55,700.00, calculate the profit or the loss percent.

Soln:

(a) Cost price of radio = ₦65,000.00 = ₦65,000.

Value of the radio after one year = 75% of the cost price

$$= 75\% \text{ of } ₦65,000 = \frac{75}{100} \times 65000 = ₦48,750.$$

(b) Cost price = ₦65,000.

Selling price = ₦55,700.

$$\text{Loss} = \text{C.P} - \text{S.P} = 65000 - 55700$$

$$= ₦ 9300.$$

$$\text{Loss percent} = \frac{\text{Loss}}{\text{Cost Price}} \times 100$$

$$= \frac{9300}{65000} \times 100 = 14\%.$$

(Q2) The selling price of a gas cooker is Gh₦450.00. If a customer is allowed a discount of 20%, calculate

(a) the discount.

(b) the amount paid by the customer.

Soln:

(a) Selling price = ₦450 : 00 = ₦450.

Discount = 20% of 450

$$= \frac{20}{100} \times 450 = ₦90.$$

(a) The amount paid by the customer = selling price – discount = 450 – 90 = ₦360.

(Q3) Rice is sold at Gh₦56 : 00 per bag of 50kg. a trader bought some bags of rice and paid ₦1,344 : 00.

(a) Find the number of bags.

(b) If the trader retailed the bags at ₦1.40 per kg, find the profit made on 1kg of rice.

Soln:

(a) Cost of each bag of 50kg rice = ₦56 : 00 = ₦56.

Since the cost price or the total cost of all the rice bought

$$= ₦1,344 : 00 = ₦1344,$$

$$\Rightarrow \text{the number the 50kg rice bought by the trader} = \frac{1344}{56} = 24 \text{ bags.}$$

(b) Since the weight of each bag of rice = 50kg, then the total weight of the 24 bags of rice

$$= 50 \times 24 = 1200\text{kg.}$$

This 1200kg of rice was retailed or sold at 1 kg for ₦1.40. Total amount had by selling the 1200kg of rice =?

$$\text{If 1 kg} = ₦1.40, \text{ then } 1200\text{kg} = \frac{1200}{1} \times 1.40. \therefore \text{The selling price of the 1200kg of rice} = ₦1680.$$

Cost price of this 1200kg of rice = ₦1344.

Profit made in the selling of the 1200kg of rice

$$= 1680 - 1344 = ₦336.$$

Profit made on 1 kg of rice =?

If 1200kg = ₦366, then 1 kg = $\frac{1}{1200} \times 366 = 0.3$. \therefore Profit made on each kg of rice = ₦0.3.

(Q4) A man earns a monthly salary of ₦10,000: 00 as a sales assistant. In addition, he is given a commission of 1.5% of sales made in the month. In January this year, sales made amounted to ₦7,500 : 00. Find the total amount he earned in January.

Soln:

Monthly salary = ₦10,000 : 00 = ₦10,000.

Commission = 1.5% of salary = $\frac{1.5}{100} \times 10,000$
= ₦150.

Total amount earned in January = Salary + Commission
= 10,000 + 150 = ₦10,150.

(Q5) The cost of sending a telegraph is ₦500 for the first 20 words, and ₦25: 00 for every extra word. What is the cost of sending a telegraph of 30 words?

Soln:

Cost of sending first 20 words = ₦500.

The number of extra words sent = 30 – 20 = 10.

Since the cost of sending each extra word = ₦25: 00 = ₦25, \Rightarrow the cost of sending the 10 extra words = 10 x 25 = ₦250.

Total cost of sending the 30 word telegraph
= the cost of sending the first 20 words + the cost of sending the extra 10 words
= 500 + 250 = 750 = ₦750.