INTEREST

PERIOD 3

SUBJECT : MATHEMATICS
CHAPTER NUMBER: 9
CHAPTER NAME : INTEREST

Learning outcome

The children will be able calculate compound interest using formulae.

EXERCISE-9C

Question 1.

A sum of Rs. 8,000 is invested for 2 years at 10% per annum compound interest. Calculate:
(i) interest for the first year.
(ii) principal for the second year.
(iii) interest for the second year.
(iv) final amount at the end of second year
(v) compound interest earned in 2 years.

Solution:

(i) Here Principal (P) = Rs. 8,000

Rate of interest = 10%

Interest for the first year $= \dfrac{8{,}000 \times 10 \times 1}{100}$

$$= Rs.\ 800$$

(ii) ∴ Amount = Rs. 8,000 + Rs. 800 = Rs. 8,800

Thus Principal for the second year = Rs. 8,800

(iii) Interest for the second year

$$= \dfrac{8{,}800 \times 10 \times 1}{100} = Rs.\ 880$$

(iv) Amount at the end of second year = Rs. 8,800 + Rs. 880 = Rs. 9,680

(v) Hence compound interest earned in 2 years = Rs. 9,680 – Rs. 8,000 = Rs. 1680

EXERCISE-9C

Question 3.
Calculate the amount and the compound interest on Rs. 12,000 in 2 years and at 10% per year.

Solution:

For 1st year

Principal (P) = Rs. 12,000

Rate (R) = 10%

Time (T) = 1 year

$$I = \text{Interest} = \frac{12{,}000 \times 10 \times 1}{100} = 120 \times 10 = \text{Rs. } 1200$$

Amount = P + I = Rs. 12,000 + Rs. 1200

$$= \text{Rs. } 13{,}200$$

For IInd year

P = Rs. 13,200, R = 10%, Time (T) = 1 year

$$\therefore \text{Interest} = \frac{13{,}200 \times 10 \times 1}{100} = 132 \times 10$$

$$= \text{Rs. } 1320$$

$\therefore$ Amount in 2 years = Rs. (13,200) + (1320)

$$= \text{Rs. } 14520$$

Compound interest in 2 years = Rs. 1200 + Rs. 1320 = Rs. 2520

[or directly = Rs. 14520 − Rs. 12000

$$= \text{Rs. } 2520]$$

EXERCISE-9C

Question 5.

Calculate the compound interest on Rs. 5,000 in 2 years; if the rates of interest for successive years be 10% and 12% respectively.

Solution:

For 1st year

Principal (P) = Rs. 5,000, Rate (R) = 10%

Time (T) = 1 year

∴ Interest = $\dfrac{5,000 \times 10 \times 1}{100}$ = 50 × 10 = Rs. 500

∴ Amount at the end of 1st year = Rs. (5000 + 500) = Rs. 5500

For 2nd year

P = Rs. 5550, Rate 12%, T = 1 year

∴ Interest = $\dfrac{5500 \times 12 \times 1}{100}$ = 55 × 12 = Rs. 660

∴ Amount at the end of 2nd year

= Rs. 5500 + Rs. 660 = Rs. 6160

Hence compound interest = Rs. 6160 – Rs. 5000 = Rs. 1160

Home Assignment

Exercise 9(C) - 1,2

THANKING YOU

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