



Compound Interest Ex 14.2 Q5

**Answer :**

Given :

$$P = \text{Rs } 50,000$$

$$R = 10\% \text{ p.a.}$$

$$n = 2 \text{ years}$$

We know that amount A at the end of n years at the rate R% per annum when the interest is

compounded annually is given by  $A = P \left( 1 + \frac{R}{100} \right)^n$ .

$$\begin{aligned} \therefore A &= \text{Rs } 50,000 \left( 1 + \frac{10}{100} \right)^2 \\ &= \text{Rs } 50,000 (1.1)^2 \\ &= \text{Rs } 60,500 \end{aligned}$$

Also,

$$\begin{aligned} \text{CI} &= A - P \\ &= \text{Rs } 60,500 - \text{Rs } 50,000 \\ &= \text{Rs } 10,500 \end{aligned}$$

We know that :

$$\begin{aligned} \text{SI} &= \frac{PRT}{100} \\ &= \frac{50,000 \times 10 \times 2}{100} \\ &= \text{Rs } 10,000 \end{aligned}$$

$$\begin{aligned} \therefore \text{Difference between CI and SI} &= \text{Rs } 10,500 - \text{Rs } 10,000 \\ &= \text{Rs } 500 \end{aligned}$$

Compound Interest Ex 14.2 Q6

**Answer :**

Amount to be paid by Amit :

$$\begin{aligned} \text{SI} &= \frac{PRT}{100} \\ &= \frac{16000 \times 17.5 \times 2}{100} \\ &= \text{Rs } 5,600 \end{aligned}$$

Amount gained by Amit :

$$\begin{aligned} A &= P \left( 1 + \frac{R}{100} \right)^n \\ &= \text{Rs } 16,000 \left( 1 + \frac{17.5}{100} \right)^2 \\ &= \text{Rs } 16,000 (1.175)^2 \\ &= \text{Rs } 22,090 \end{aligned}$$

We know that :

$$\begin{aligned} \text{CI} &= A - P \\ &= \text{Rs } 22,090 - \text{Rs } 16,000 \\ &= \text{Rs } 6090 \end{aligned}$$

$$\begin{aligned} \text{Amit's gain in the whole transaction} &= \text{Rs } 6,090 - \text{Rs } 5,600 \\ &= \text{Rs } 490 \end{aligned}$$

Compound Interest Ex 14.2 Q7

**Answer :**

**Given :**

$$P = \text{Rs } 4,096$$

$$R = 12.5\% \text{ p.a.}$$

$$n = 18 \text{ months} = 1.5 \text{ years}$$

**We have :**

$$A = P \left( 1 + \frac{R}{100} \right)^n$$

When the interest is compounded semi – annually, we have :

$$A = P \left( 1 + \frac{R}{200} \right)^{2n}$$

$$= \text{Rs } 4,096 \left( 1 + \frac{12.5}{200} \right)^3$$

$$= \text{Rs } 4,096 (1.0625)^3$$

$$= \text{Rs } 4,913$$

Thus, the required amount is Rs 4,913.

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