Compound Interest Ex 14.3 Q12

Answer :

Let the rate of interest be R%.
Then,

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

$$774.40 = 640\left(1 + \frac{R}{100}\right)^2$$

$$\left(1 + \frac{R}{100}\right)^2 = \frac{774.40}{640}$$

$$\left(1 + \frac{R}{100}\right)^2 = 1.21$$

$$\left(1 + \frac{R}{100}\right)^2 = (1.1)^2$$

$$\left(1 + \frac{R}{100}\right) = 1.1$$

$$\frac{R}{100} = 0.1$$

$$R = 10$$

Thus, the required rate of interest is 10% per annum.

Compound Interest Ex 14.3 Q13

Answer :

Let the rate of interest be R%.
Then,

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

$$2,662 = 2,000\left(1 + \frac{R}{100}\right)^3$$

$$\left(1 + \frac{R}{100}\right)^3 = \frac{2,662}{2,000}$$

$$\left(1 + \frac{R}{100}\right)^3 = 1.331$$

$$\left(1 + \frac{R}{100}\right)^3 = (1.1)^3$$

$$\left(1 + \frac{R}{100}\right) = 1.1$$

$$\frac{R}{100} = 0.1$$

$$R = 10$$

Because the interest rate is being compounded half – yearly, it is 20% per annum.

Compound Interest Ex 14.3 Q14

Answer :

Let the sum be Rs P and the rate of interest be R%.
We know that Kamla paid Rs 200 as simple interest.

$$\therefore\ 200 = \frac{PR(2)}{100}$$

$$PR = 10,000 \quad \ldots\left(1\right)$$

Also, Kamla received Rs 210 as compound interest.

$$\therefore\ 210 = P\left(1+\frac{R}{100}\right)^2 - 1$$

$$210\left(10,000\right) = P\left(R^2 + 200R\right)$$

$$210R = R^2 + 200R \qquad \left[\text{from } \left(1\right)\right]$$

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

Putting the equation in $\left(1\right)$, we get :

$$P = 1,000$$

Thus, the required sum is Rs 1,000 and the rate of interest is 10%

********** END **********