Compound Interest Ex 14.2 Q20

Answer :

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

Also,

$P = A - CI$

Let the sum of money be Rs x.

If the interest is compounded annually, then :

$A_1 = x\left(1 + \frac{20}{100}\right)^2$

$= 1.44x$

$\therefore CI = 1.44x - x$

$= 0.44x \quad \ldots(1)$

If the interest is compounded half – yearly, then :

$A_2 = x\left(1 + \frac{10}{100}\right)^4$

$= 1.4641x$

$\therefore CI = 1.4641x - x$

$= 0.4641x \quad \ldots(2)$

It is given that if interest is compounded half – yearly, then it will be Rs 482 more.

$\therefore 0.4641x = 0.44x + 482 \quad [\text{From } (1) \text{ and } (2)]$

Compound Interest Ex 14.2 Q21

Answer :

$P = \frac{SI \times 100}{RT}$

$\therefore P = \frac{5{,}200 \times 100}{6.5 \times 2}$

$= 40{,}000$

Now,

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

$= 40{,}000\left(1 + \frac{6.5}{100}\right)^2$

$= 40{,}000(1.065)^2$

$= 45{,}369$

Also,

$CI = A - P$

$= 45{,}369 - 40{,}000$

$= 5{,}369$

Thus, the required compound interest is Rs 5,369.

Compound Interest Ex 14.2 Q22

Answer :

We know that :

$$P = \frac{SI \times 100}{RT}$$

$$\therefore P = \frac{1200 \times 100}{5 \times 3}$$

$$= 8,000$$

Now,

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

$$= 8,000\left(1 + \frac{5}{100}\right)^3$$

$$= 8,000(1.05)^3$$

$$= 9,261$$

Now,

$$CI = A - P$$

$$= 9,261 - 8,000$$

$$= 1,261$$

Thus, the required compound interest is Rs $1,261$.

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