Compound Interest Ex 14.2 Q5

Answer :

Given :
$P = \text{Rs } 50,000$
$R = 10\%$ p.a.
$n = 2$ 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 $A = P\left(1 + \frac{R}{100}\right)$.

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

Also,
$CI = A - P$
$= \text{Rs } 60,500 - \text{Rs } 50,000$
$= \text{Rs } 10,500$
We know that :
$SI = \frac{PRT}{100}$
$= \frac{50,000 \times 10 \times 2}{100}$
$= \text{Rs } 10,000$
$\therefore$ Difference between CI and SI $= \text{Rs } 10,500 - \text{Rs } 10,000$
$= \text{Rs } 500$

Compound Interest Ex 14.2 Q6

Answer :

Amount to be paid by Amit :
$SI = \frac{PRT}{100}$
$= \frac{16000 \times 17.5 \times 2}{100}$
$= \text{Rs } 5,600$
Amount gained by Amit :
$A = P\left(1 + \frac{R}{100}\right)^n$
$= \text{Rs } 16,000\left(1 + \frac{17.5}{100}\right)^2$
$= \text{Rs } 16,000(1.175)^2$
$= \text{Rs } 22,090$
We know that :
$CI = A - P$
$= \text{Rs } 22,090 - \text{Rs } 16,000$
$= \text{Rs } 6090$
Amit's gain in the whole transaction $= \text{Rs } 6,090 - \text{Rs } 5,600$
$= \text{Rs } 490$

Compound Interest Ex 14.2 Q7

Answer :

Given :

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

$R = 12.5\%$ p. a.

$n = 18$ months $= 1.5$ 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 $4,913$.

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