Compound Interest Ex 14.4 Q10

Answer :

$$\text{Population at the end of the year } 2000 = P\left(1+\frac{R_1}{100}\right)\left(1-\frac{R_2}{100}\right)$$
$$= 72,000\left(1+\frac{7}{100}\right)\left(1-\frac{10}{100}\right)$$
$$= 72,000(1.07)(0.9)$$
$$= 69,336$$

Thus, the population at the end of the year 2000 was 69,336.

Compound Interest Ex 14.4 Q11

Answer :

Number of workers $= 6,400$

At the end of the first year, 25% of the workers were retrenched.

$\therefore$ 25% of $6,400 = 1,600$

Number of workers at the end of the first year $= 6,400 - 1,600 = 4,800$

At the end of the second year, 25% of those working were retrenched.

$\therefore$ 25% of $4,800 = 1,200$

Number of workers at the end of the second year $= 4,800 - 1,200 = 3,600$

At the end of the third year, 25% of those working increased.

$\therefore$ 25% of $3,600 = 900$

Number of workers at the end of the third year $= 3,600 + 900 = 4,500$

Thus, the number of workers during the fourth year was 4,500.

Compound Interest Ex 14.4 Q12

Answer :

$$\text{Aman's profit for three years} = P\left(1-\frac{R_1}{100}\right)\left(1+\frac{R_2}{100}\right)\left(1+\frac{R_3}{100}\right)$$
$$= 100,000\left(1-\frac{5}{100}\right)\left(1+\frac{10}{100}\right)\left(1+\frac{12}{100}\right)$$
$$= 100,000(0.95)(1.10)(1.12)$$
$$= 117,040$$
$$\therefore \text{ Net profit} = \text{Rs } 117,040 - \text{Rs } 100,000$$
$$= \text{Rs } 17,040$$

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