$\therefore$ Compound interest $=$ amount $-$ principal $=$ Rs. 41209 $-$ Rs. 40000 $=$ Rs. 1209

Q8.

Answer :

(b) 26460

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

$= $ Rs. $24000 \times \left(1 + \frac{5}{100}\right)^2$

$= $ Rs. $24000 \times \left(\frac{105}{100}\right)^2$

$= $ Rs. $24000 \times \left(\frac{21}{20}\right) \times \left(\frac{21}{20}\right)$

$= $ Rs. $(60 \times 21 \times 21)$

$= $ Rs. 26460

Q9.

Answer :

(c) Rs. 43740

Here, $A = $ Rs. $P \times \left(1 - \frac{R}{100}\right)^n$

$= $ Rs. $60000 \times \left(1 - \frac{10}{100}\right)^3$

$= $ Rs. $60000 \times \left(\frac{90}{100}\right)^3$

$= $ Rs. $60000 \times \left(\frac{9}{10}\right) \times \left(\frac{9}{10}\right) \times \left(\frac{9}{10}\right)$

$= $ Rs. $(60 \times 9 \times 9 \times 9)$

= Rs. 43740

Q10.

Answer :

(b) Rs. 62500

Here, $A = P \times \left(1 - \frac{R}{100}\right)^n$

$= P \times \left(1 - \frac{20}{100}\right)^2$

$= P \times \left(\frac{80}{100}\right)^2$

$= P \times \left(\frac{4}{5}\right) \times \left(\frac{4}{5}\right)$

$\Rightarrow 40000 = \frac{16P}{25}$

$\therefore P = \frac{40000 \times 25}{16} = \text{Rs } 62500$

Q11.

Answer:

(a) 25000

Let P be the popultion 3 years ago.
Now, present population $= 33275$

$$\Rightarrow 33275 = P \times \left(1 + \frac{10}{100}\right)^3$$

$$\Rightarrow 33275 = P \times \left(\frac{110}{100}\right)^3$$

$$\Rightarrow 33275 = P \times \left(\frac{11}{10}\right) \times \left(\frac{11}{10}\right) \times \left(\frac{11}{10}\right)$$

$$\Rightarrow 33275 = \frac{1331P}{1000}$$

$$\therefore P = \frac{33275 \times 1000}{1331} = 25000$$

Q12.

Answer:

(d) Rs 1261

Here, $\text{SI} = \frac{P \times 5 \times 3}{100}$

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

$$\Rightarrow P = \frac{1200 \times 100}{5 \times 3} = \text{Rs } 8000$$

Amount at the end of 3 years $= \text{Rs } 8000 \times \left(1 + \frac{5}{100}\right)^3$

$$= \text{Rs } 8000 \times \left(\frac{105}{100}\right)^3$$

$$= \text{Rs } 8000 \times \left(\frac{21}{20}\right) \times \left(\frac{21}{20}\right) \times \left(\frac{21}{20}\right)$$

$$= \text{Rs } (21 \times 21 \times 21)$$

$$= \text{Rs } 9261$$

$$\therefore \text{CI} = A - P = \text{Rs } \left(9261 - 8000\right) = \text{Rs } 1261$$

Q13.

Answer:

(d) Rs 480

We have : $510 = \left\{ P \times \left(1 + \frac{25}{100 \times 2}\right)^2 \right\} - P$

$$\Rightarrow 510 =\Rightarrow \left\{ P \times \left(\frac{8+1}{8}\right)^2 \right\} - P$$

$$\Rightarrow 510 = \left\{ P \times \left(\frac{9}{8}\right) \times \left(\frac{9}{8}\right) \right\} - P$$

$$\Rightarrow 510 = \left(\frac{81P}{64} - P\right)$$

$$\Rightarrow 510 = \left(\frac{81P - 64P}{64}\right)$$

$\Rightarrow 510 = \frac{17P}{64}$

$\therefore P = \frac{510 \times 64}{17} = $ Rs 1920

Now, $SI = \frac{P \times R \times T}{100}$

$= $ Rs $\frac{1920 \times 2 \times 25}{100 \times 2} = $ Rs 480

Q14.

Answer:

(d) Rs 4096

We have Rs $4913 = \left\{ P \times \left(1 + \frac{25}{100 \times 4} \right)^3 \right\}$

$\Rightarrow$ Rs $4913 = \left\{ P \times \left(\frac{16+1}{16} \right)^3 \right\}$

$\Rightarrow$ Rs $4913 = \left\{ P \times \left(\frac{17}{16} \right) \times \left(\frac{17}{16} \right) \times \left(\frac{17}{16} \right) \right\}$

$\Rightarrow$ Rs $4913 = \frac{4913P}{4096}$

$\Rightarrow P = $ Rs $\frac{4913 \times 4096}{4913} = $ Rs 4096

Q15.

Answer:

(c) 6%

Here, $A = P \times \left(1 + \frac{R}{100} \right)$

$= $ Rs. $7500 \times \left(1 + \frac{R}{100} \right)^2$

$= $ Rs. $7500 \times \left(1 + \frac{R}{100} \right)^2$

However, amount $= $ Rs. 8427

Now, Rs. $8427 == $ Rs. $7500 \times \left(1 + \frac{R}{100}\right)^2$

$\Rightarrow \frac{\text{Rs. } 8427}{\text{Rs. } 7500} = \left(1 + \frac{R}{100}\right)^2$

$\Rightarrow \left(\frac{53}{50}\right)^2 = \left(1 + \frac{R}{100}\right)^2$

$\Rightarrow \left(1 + \frac{R}{100}\right) = \left(\frac{53}{50}\right)$

$\Rightarrow \frac{R}{100} = \frac{53}{50} - 1$

$\Rightarrow \frac{R}{100} = \frac{53-50}{50} = \frac{3}{50}$

$\therefore R = \frac{300}{50} = 6\%$

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