



Exercise 12A

$$\text{Now, S.I.} = \frac{P \times R \times T}{100} = \frac{10450 \times 10 \times 2}{100 \times 1} = \text{Rs. } 2508$$

$$\begin{aligned} \therefore A &= P + \text{S.I.} \\ &= \text{Rs. } 10450 + \text{Rs. } 2508 \\ &= \text{Rs. } 12958 \end{aligned}$$

Q18

Answer :

$$P = \text{Rs. } 3600 \quad A = \text{Rs. } 4734 \quad T = 3\frac{1}{2} = \frac{7}{2} \text{ years}$$

$$\begin{aligned} \text{S.I.} &= A - P \\ &= 4734 - 3600 \\ &= \text{Rs. } 1134 \end{aligned}$$

$$\begin{aligned} R &= \frac{\text{S.I.} \times 100}{P \times T} \\ &= \frac{1134 \times 100 \times 2}{3600 \times 7} \\ &= 9\% \end{aligned}$$

Q19

Answer :

$$P = \text{Rs. } 640, A = \text{Rs. } 768, T = 2 \text{ years } 6 \text{ months} = \frac{5}{2} \text{ years}$$

$$\begin{aligned} \text{S.I.} &= A - P \\ &= 768 - 640 \\ &= \text{Rs. } 128 \end{aligned}$$

$$R = \frac{\text{S.I.} \times 100}{P \times T} = \frac{128 \times 100 \times 2}{640 \times 5} = 8\%$$

$$P = \text{Rs. } 850, R = 8\%, T = 3 \text{ years}$$

$$\therefore \text{S.I.} = \frac{P \times R \times T}{100} = \frac{850 \times 8 \times 3}{100} = \frac{2040}{10} = \text{Rs. } 204$$

$$\begin{aligned}
 \therefore A &= P + \text{S.I.} \\
 &= 850 + 204 \\
 &= \text{Rs. } 1054
 \end{aligned}$$

Q20

Answer :

$$P = \text{Rs. } 5600, A = \text{Rs. } 6720, R = 8\%$$

$$\begin{aligned}
 \text{S.I.} &= A - P \\
 &= 6720 - 5600 \\
 &= \text{Rs. } 1120
 \end{aligned}$$

$$\begin{aligned}
 T &= \frac{\text{S.I.} \times 100}{P \times R} \\
 &= \frac{1120 \times 100}{5600 \times 8} \\
 &= \frac{1120}{448} \\
 &= 2\frac{1}{2} \text{ years}
 \end{aligned}$$

Q21

Answer :

Let the sum be Rs. x .

$$\text{Amount} = \frac{8x}{5}$$

$$\begin{aligned}
 \therefore \text{S.I.} &= A - P = \frac{8x}{5} - x \\
 &= \frac{3x}{5}
 \end{aligned}$$

Let the rate be $R\%$.

$$\text{S.I.} = \frac{P \times R \times T}{100}$$

$$\Rightarrow \frac{3x}{5} = \frac{x \times R \times 5}{100}$$

$$\Rightarrow 3x \times 20 = R \times x \times 5$$

$$\Rightarrow R = \frac{3 \times 100 \times 2}{100 \times 5} = 12$$

Hence, the rate of interest is 12%.

Q22

Answer :

Amount in 3 years = (Principal + S.I. for 3 years) = Rs. 837

Amount in 2 years = (Principal + S.I. for 2 years) = Rs. 783

On subtracting :

S.I. for 1 year = (837 - 783) = Rs. 54

S.I. for 2 years = $\left(\frac{54}{1} \times 2\right)$ = Rs. 108

\therefore Sum = Amount for 2 years - S.I. for 2 years

= 783 - 108

= Rs. 675

P = Rs. 675, S.I. = Rs. 108 and T = 2 years

$$R = \frac{S.I. \times 100}{P \times T}$$

$$= \frac{108 \times 100}{675 \times 2}$$

$$= \frac{108 \times 100}{1350}$$

$$= 8\%$$

Q23

Answer :

Amount in 5 years = (Principal + S.I. for 5 years) = Rs. 5475

Amount in 3 years = (Principal + S.I. for 3 years) = Rs. 4745

On subtracting :

$$\text{S.I. for 2 years} = (5475 - 4745) = \text{Rs. } 730$$

$$\text{S.I. for 3 years} = \left(\frac{730}{2} \times 3 \right) = \text{Rs. } 1095$$

$$\begin{aligned} \therefore \text{Sum} &= \text{Amount for 3 years} - \text{S.I. for 3 years} \\ &= 4745 - 1095 \\ &= \text{Rs. } 3650 \end{aligned}$$

$$P = \text{Rs. } 3650, \text{ S.I.} = \text{Rs. } 1095, T = 3 \text{ years}$$

$$\begin{aligned} R &= \frac{\text{S.I.} \times 100}{P \times T} \\ &= \frac{1095 \times 100}{3650 \times 3} \\ &= 10\% \end{aligned}$$

Q24

Answer :

Let the first part be Rs. x .

$$\text{Second part} = (3000 - x)$$

$$\therefore \text{S.I. on } x \text{ at } 8\% \text{ per annum for 4 years} = \frac{x \times 8 \times 4}{100} = \frac{8x}{25}$$

$$\begin{aligned} \text{S.I. on } (3000 - x) \text{ at } 9\% \text{ per annum} &= \frac{(3000 - x) \times 9 \times 2}{100} \\ &= \frac{27000 - 9x}{50} \end{aligned}$$

$$\therefore \frac{8x}{25} = \frac{27000 - 9x}{50}$$

$$\Rightarrow 8x = \frac{(27000 - 9x) \times 2}{5}$$

$$\Rightarrow 16x = 27000 - 9x$$

$$\Rightarrow 16x + 9x = 27000$$

$$\Rightarrow x = \frac{27000}{25} = 1080$$

$$\therefore \text{First part} = \text{Rs. } 1080$$

$$\text{Second part} = (3000 - 1080) = \text{Rs. } 1920$$

Q25

Answer :

Let the first part be Rs. x .

$$\text{Second part} = (3600 - x)$$

$$\therefore \text{S.I. on } x \text{ at } 9\% \text{ per annum for 1 years} = \frac{x \times 9 \times 1}{100} = \frac{9x}{100}$$

$$\text{And, S.I. on } (3600 - x) \text{ at } 10\% \text{ per annum} = \frac{(3600 - x) \times 1 \times 10}{100} = \frac{3600 - x}{10}$$

$$\therefore \frac{9x}{100} + \frac{3600 - x}{10} = 333$$

$$\Rightarrow \frac{9x + 36000 - 10x}{100} = 333$$

$$\Rightarrow -x + 36000 = 33300$$

$$\Rightarrow -x = 33300 - 36000$$

$$\Rightarrow -x = -2700$$

$$\Rightarrow x = 2700$$

$$\text{First part} = \text{Rs. } 2700$$

$$\text{Second part} = (3600 - 2700) = \text{Rs. } 900$$

***** END *****