

⑥ Money borrowed (P) = Rs 80,000
 rate (R) = 10% p.a.
 time (n) = $1\frac{1}{2}$ years

$$\begin{aligned} \text{(i) amount} &= P \left(1 + \frac{R}{100}\right)^1 \left(1 + \frac{R/2}{100}\right)^1 \\ &= 80000 \left(1 + \frac{10}{100}\right) \left(1 + \frac{5}{100}\right) \\ &= \cancel{80000} \times \frac{110}{\cancel{100}} \times \frac{105}{\cancel{100}} \\ &= \text{Rs } 92400 \end{aligned}$$

(ii) rate (R) = 10% p.a. = 5% half yearly
 time (n) = $1\frac{1}{2}$ years = 3 half years

$$\begin{aligned} \text{amount} &= P \left(1 + \frac{R}{100}\right)^n \\ &= 80000 \left(1 + \frac{5}{100}\right)^3 \\ &= \cancel{80000}^2 \times \frac{105}{\cancel{100}} \times \frac{105}{\cancel{100}}^{21} \times \frac{105}{\cancel{100}}^{21} \\ &= \text{Rs } 92610 \end{aligned}$$

$$\begin{aligned} \text{Required difference} &= 92610 - 92400 \\ &= \text{Rs } 210 \end{aligned}$$