

Banking.

Lecture-I

Total no. of lecture = 1

$$1) M.V = Pn + I$$

M.V $\rightarrow$ Maturity value

P $\rightarrow$ Principal amount

n $\rightarrow$ no. of months.

I $\rightarrow$ Interest.

R $\rightarrow$ Rate of interest.

$$2) I = P \frac{n(n+1)}{2} \times \frac{1}{12} \times \frac{R}{100}$$

Illustration

- 1) Kisan deposited ₹ 200 per month for 36 months in a bank's recurring deposit account. If the bank pays interest at 11% per annum, find the amount she gets on Maturity. (2012)

Soln.

$$\begin{aligned} M.V &= Pn + P \times \frac{n(n+1)}{2} \times \frac{1}{12} \times \frac{R}{100} \\ &= 200 \times 36 + \frac{200 \times 36 \times 37 \times 11}{2 \times 12 \times 100} \\ &= 7200 + 11 \times 11 = 7200 + 121 = ₹ 8421. \end{aligned}$$

2) Mohan has a recurring deposit account in a bank for 2 years at 6% per annum simple interest. If he gets 1200 as interest at the time of maturity. find

- (a) Monthly instalment (b) the amount of maturity.

3) Ram opened a recurring deposit account in a bank & deposited ₹800 per month for $1\frac{1}{2}$ years. If he received ₹15084 at the time of maturity, find the rate of interest per annum.

4)

Preeti has a recurring deposit account of ₹1000 per month at 10% per annum. If she gets ₹5550 as interest at the time of maturity, find the total time for which the account was held.

(2018)

Sol: $P = 1000, R = 10\%, I = 5550$

$$I = P \times \frac{n(n+1)}{2} \times \frac{1}{12} \times \frac{R}{100}$$

$$\Rightarrow 5550 = 1000 \times \frac{n(n+1)}{2} \times \frac{1}{12} \times \frac{10}{100}$$

$$222 = \frac{n(n+1)}{6} \Rightarrow 1332 = n^2 + n$$

$$\Rightarrow n(n+1) = 1332$$

$$n^2 + n - 1332 = 0$$

$$n^2 + 37n - 36n - 1332 = 0$$

$$(n+37)(n-36) = 0 \Rightarrow n = 36$$

$$\Rightarrow n(n+1) = 36 \times 37$$

$$\Rightarrow n = 36$$

$$\begin{array}{r|l} 2 & 1332 \\ \hline 2 & 666 \\ 3 & 333 \\ 3 & 111 \\ \hline & 37 \end{array}$$

