

AI1110 Assignment 1

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Q5(B): Rekha opened a recurring deposit account for 20 months. The rate of interest is 9% per annum and Rekha receives ₹441 as interest at the time of maturity. Find the amount Rekha deposited each month.

Solution:

According to given question

Rekha opened a recurring deposit account for 20 months(n),

Rate of interest(r) is 9% per annum, and Rekha receives ₹441 as interest at the time of maturity.

From simple interest formula $I = p \cdot t \cdot \frac{r}{100}$

$$\text{Total Interest(i)} = x \cdot \frac{1}{12} \cdot \frac{9}{100} + x \cdot \frac{2}{12} \cdot \frac{9}{100} + x \cdot \frac{3}{12} \cdot \frac{9}{100} + \dots + x \cdot \frac{20}{12} \cdot \frac{9}{100}$$

Given Total Interest is 441 then

$$441 = x \cdot \frac{9}{1200} (1 + 2 + 3 + \dots + 20)$$

$$x = \frac{441 \cdot 1200 \cdot 2}{9 \cdot 20 \cdot 21}$$

Finally we get $x = 280$

c code output as follows

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE
avinashnayak@AVINASHs-MacBook-Air Assignment 1 % gcc main.c
avinashnayak@AVINASHs-MacBook-Air Assignment 1 % ./a.out
Rekha deposited ₹280 each month to get ₹441 as interest at the end of maturity period
avinashnayak@AVINASHs-MacBook-Air Assignment 1 %
```