# ASSIGNMENT 1

EE22BTECH11060 - TEJAVATH KUSHAL*

*QUESTION 17:*

A man starts repaying a loan as first instalment of Rs. 100. If he increases the instalment by Rs 5 every month, what amount he will pay in the 30th instalment?

*ANSWER:*

Instalment paid by the man : 100
Instalment increased by the man per month: 5

The nth term of an arithmetic progression can be found using the formula:

$$a_n = a + (n)d \tag{1}$$

Here, (**??**)

| | |
|---|---|
| a | first term |
| n | number term |
| d | common difference |

In this case, the first term (a) is 100 and the common difference (d) is 5.

The amount paid in the 30th instalment:

$$a_n = a + (n)d$$

Here, n=29
$a_{29} = 100 + (29 * 5)$
$a_{29} = 100 + 145$
$a_{29} = 245$

Therefore, the man will pay Rs. 245 in the 30th instalment.