#### 1

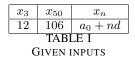
## NCERT Discrete

# Pragnidhved Reddy EE23BTECH11050

### **Question 10.5.2.8:**

An AP consists of 50 terms of which  $3^{rd}$  term is 12 and the last term is 106. Find the  $29^{th}$  term.

### **Solution:**



For an AP

$$x_n - x_{n-1} = d \tag{1}$$

Given

$$x_0 + 3d = 12 (2)$$

Given

$$x_0 + 50d = 106 \tag{3}$$

(2) - (1)

$$x_0 + 50d - (x_0 + 3d) = 106 - 12$$
 (4)

$$47d = 94$$
 (5)

$$d = 2 \tag{6}$$

Substituting d in (1)

$$x_0 + 3(2) = 12 \tag{7}$$

$$x_0 = 6 \tag{8}$$

We know that

$$x_{29} = x_0 + 29d (9)$$

By (8) and (6) in (9)

$$x_{29} = 6 + 29(2) \tag{10}$$

$$x_{29} = 6 + 58 \tag{11}$$

$$x_{29} = 64 (12)$$