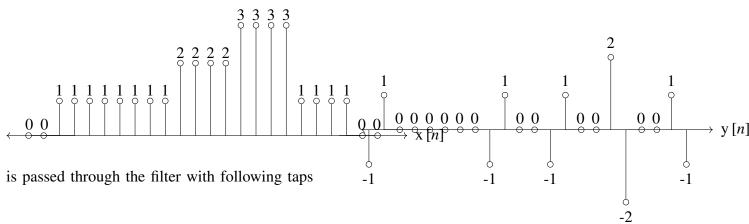
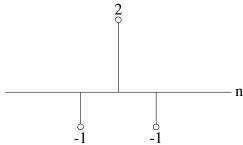
## 1

## GATE IN22 44

## EE23BTECH11043 - BHUVANESH SUNIL NEHETE\*

Question: The input signal shown below





The number of non-zero output samples is \_\_\_\_\_.

## **Solution:**

$$h[n] = -\delta[n] + 2\delta[n+1] - \delta[n+2]$$
 (1)

$$y[n] = x[n] * h[n]$$
(2)

$$= x[n] * (-\delta[n] + 2\delta[n+1] - \delta[n+2])$$
 (3)

$$y[n] = -x[n] + 2x[n+1] - x[n+2]$$
 (4)

The number of non-zero output samples is 10.

