

# Oppenheim

EP20BTECH11017

Q. Determine the inverse Z-transform of:

$$X(z) = e^{z^{-1}} \quad (1)$$

**Solution:**

$$e^{z^{-1}} = 1 + z^{-1} + \frac{z^{-2}}{2!} + \dots \quad (2)$$

$$e^{z^{-1}} = \sum_{n=0}^{\infty} \frac{z^{-n}}{n!} \quad (3)$$

$$e^{z^{-1}} = Z[1/n!] \quad (4)$$

$$\text{Therefore, } Z^{-1}(e^{z^{-1}}) = \frac{1}{n!} \quad (5)$$

Q. sketch  $x[2n]$  when  $x[n]$  is given:



**Solution:**

