Oppenheim

EP20BTECH11017

Q. Determine the inverse Z-transform of:

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

Solution:

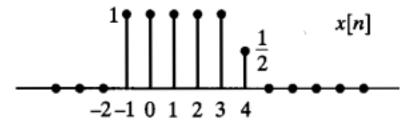
$$e^{z^{-1}} = 1 + z^{-1} + \frac{z^{-2}}{2!}$$
..... (2)

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

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

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

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



Solution:

