

Digital Signal Analysis

QUIZ-1

Answer All Questions

1. State whether the below system is time invariance or linear or causal with explanation.

$$y(n) = x(n-1) + x(n+1) + y(n+1) + 2$$

2. Calculate linear convolution of $x(n) = (1, 2, 3, 2)$ and $h(n) = (2, 3, 2)$ using circuit convolution.
3. Calculate Nyquist sampling rate for signal $x(t) = \cos(200\pi t) \cos(400\pi t)$.
4. Calculate DFT using Decimation in Time FFT for $x(n) = (1, 2, 3, 1, 2, 3, 4, 1)$.
5. Calculate DTFT for $x(n) = \left(\frac{1}{3}\right)^n u(n+3)$.