

# Digital Signal Analysis

## QUIZ-1

Answer All Questions

Marks:20

1. State whether the below system is time invariance or linear or causal with explanation. [6 M]  
$$y(n) = x(n-1) + x(n+1) + y(n+1) + 2$$
2. Calculate linear convolution of  $x(n) = \{1, 2, 3, 2\}$  and  $h(n) = \{2, 3, 2\}$  using circular convolution. [3 M]
3. Calculate Nyquist sampling rate for signal  $x(t) = \cos(200\pi t) \cdot \cos(400\pi t)$ . [2 M]
4. Calculate DFT using Decimation in Time FFT for  $x(n) = \{1, 2, 3, 1, 2, 3, 4, 1\}$  [6 M]
5. Calculate DTFT for  $x(n) = \left(\frac{1}{3}\right)^n u(n+3)$ . [3 M]