

## Sf-sem-IV- CBSGS-Electrical-S.P

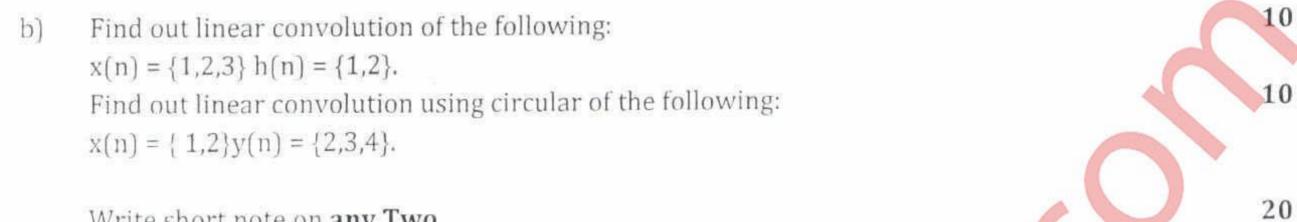
12/12/19-

## Q.P. Code :24726

## [Marks:80] [Time: 03 Hours] Please check whether you have got the right question paper. 1. Q.1 is compulsory. N.B: 2. Attempt any three questions from remaining questions Assume suitable data wherever required. Find even and add components for h(n)=(2,3,1,2,3)05 Q.1 a) 05 Find z- transform of the following $x(n) = \cos wn u(n)$ . b) 05 Find the sequence for: $-x(n) = \delta(n) + 2\delta(n-1) - \delta(n-2)$ . c) 05 Give proof of any two properties of Z-Transform. d) Identify the filter based on its pass band by analytical method. Draw pole-zero plot: 10 Q.2a) $H(z) = \frac{1}{1 + 0.08z^{-1}}$ 10 b) Find X(K), using DIT-FFT algorithm for given sequence: $x(n) = \{1,2,3,4,4,3,2,1\}.$ 10 Sketch the signals using step and ramp signals. Q.3x(t) = t u(t) - (t - 1)u(t - 1) + u(t - 2) - 3 u(t - 3) $x(t) = 2 \delta(n) + 3 \delta(n-2)$ 10 System is described by the difference equation: b) y(n) = y(n + 1) + x(n) + x(n-1)Find: 1) Transfer function 2) Impulse response Find out circular convolution to the following sequence using DFT and IDFT: Q.4. 10 a) $x(n) = \{1, 1, 2, 1\} h(n) = \{1, 2, 3, 4\}.$ Classify the following systems as linear / nonlinear, variant / invariant, causal /non-causal and b) 10 dynamic / static $y(n) = e^{x(n)}$ y(n) = Ax(n) + BQ.5 Find Z-inverse transform of the following: a) 10 For: Causal system Anti-causal system

Page 1 of 2

Stable system



## Q.6 Write short note on any Two

- 1. Properties of DFT
- 2. Min, Max on Mix phase system
- 3. Significance of ROC in z- transform with examples
- 4. Types of signals



Page 2 of 2