

Total No. of Questions : 6]

SEAT No. :

P278

Oct./BE/Insem. - 596

[Total No. of Pages : 1

B.E. (Computer Engineering)

DIGITAL SIGNAL PROCESSING

(2015 Course) (Semester - I) (410244A) (Elective - I)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) *Answer Q1 or Q2, Q3 or Q4 and Q5 or Q6.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Assume suitable data, if required.*
- 4) *Figures to right indicate full marks.*

- Q1)** a) Explain in brief the LTI System ? Explain its types? [5]
b) With example explain the time scaling and time reversal operations Performed on the DT Signal? [5]

OR

- Q2)** a) Explain the ADC process as sampling, Quantization and encoding? [5]
b) State the following properties with one example each? [5]
i) Time Invariant System
ii) Stability
iii) Linearity

- Q3)** a) Perform following circular shifting operations on a given DT signal $x(n)=\{1,2,3,4\}$ with $N=5$ and $N=6$? $x((n-3))N$ [5]
b) Obtain Linear Convolution for the DT signal $x(n)=\{2,-3,6,1\}$ and $h(n)=\{1,2,1\}$? [5]

OR

- Q4)** a) State the periodicity and symmetry property of DFT? How can we compute N-point circular convolution using DFT and IDFT? [5]
b) Explain the procedure to perform linear convolution using the method of Circular convolution? [5]
- Q5)** a) Explain the initial value and Final value theorem? [5]
b) Obtain the ZT of two standard signals $u(n)$ and $d(n)$? plot its ROCs? [5]

OR

- Q6)** a) Derive the relationship between ZT and FT? [5]
b) Explain the ROC and its various properties? [5]

