

ME ELX SEM-II (CBCGS) DATE-23/05/2017. Q.P. Code: 13535

Duration-3 hrs

Maximum Marks: 80

- N.B : 1. Question No. 1 is Compulsory
 2. Answer any 3 questions from remaining five questions
 3. Figures to right indicate full marks
 4. Assume suitable data if required.

- Q.1 a) Describe multistage implementation of sampling rate conversion. (20)
 b) Derive Wiener Hopf equation.
 c) Explain RLS algorithm.
 d) Define Periodogram .How it can be smoothed?
- Q.2 a) Derive the equation for the spectrum of an interpolated signal by a factor I . Draw the spectral diagrams. (20)
 b) Describe sampling rate conversion by a rational factor I/D with equations.
- Q.3 a) Derive Schur algorithm. (20)
 b) Derive AR lattice structure.
- Q.4 a) Describe any one nonparametric method of PSD estimation. (20)
 b) Explain the Blackman and Tukey method of smoothing the periodogram.
- Q.5 a) Explain the LMS algorithm with equations. (20)
 b) Describe the properties of RLS algorithm.
- Q.6 Explain the following topics in details with diagrams. (20)
 a) Biomedical applications of DSP.
 b) Applications of DSP in speech processing.