Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MEPS-301(B)

M.E./M.Tech., III Semester

Examination, December 2016

DSP and its Application (Elective-I)

Time : Three Hours

Maximum Marks: 70

Note: i) Attempt any five questions out of eight.

ii) All questions carry equal marks.

1. a) Classify signals on the basis of their symmetry property, periodicity.

   b) Differentiate energy and power signal and explain Parseval's theorem.

2. a) Explain and derive necessary and sufficient condition for stability of DTS.

   b) Explain mapping from S-domain to Z-domain. How these two domains are related? Establish the relationship.

3. a) Explain time reversal property of Fourier transfer with a suitable example and application.

   b) Explain Sampling theorem in frequency domain.

4. a) How many real additions, real multiplications and trigonometric functions are involved in direct computation of N-point DFT? Derive and explain.

   b) Draw and explain radix-2 DIT FFT algorithm.

5. a) Explain frequency Sampling method of FIR filter design.

   b) What is the criteria of selection of window function in FIR filter design. How window function affects the performance of FIR filter.

6. a) For given $H_a(s) = \dfrac{s+2}{s^2+4s+1}$

   Determine H(Z) by impulse invariance method with T=1sec.

   b) Make comparison between Impulse invariance and Bilinear transformation method of IIR filter design.

7. a) Draw and Explain FET spectrum analyser.

   b) Explain basic functions of D.S.P processor chip.

8. Write short notes on any two of the following :

   a) FET algorithm

   b) Quantization and Coding

   c) Analog and Digital signal processor.

******

160