Roll No .....

CS/IT/EE - 405

B.E. IV Semester Examination, June 2014

Analog and Digital Communication

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

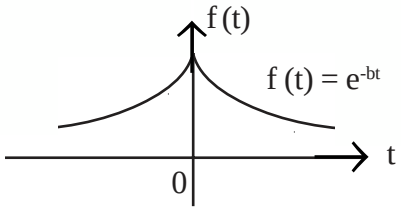
ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) What are the merits of the Fourier transform. 2
   b) What are the limitations of the Fourier transform. 2
   c) Discuss the Parseval's theorem. 3
   d) Find the Fourier transformed a double sided exponential signal e^{-bt} shown in the fig. 7



OR

Discuss the properties of the Fourier transform. 7

Unit - II

2. a) Describe frequency modulation. 2
   b) What is the bandwidth required for an FM signal in which the modulating frequency of 52kHz and the maximum deviation is 10kHz. 2
   c) Discuss the VSB transmission. 3
   d) Discuss the balanced modulator circuit and its principle. 7

OR

Discuss the switching modulator circuits to chopp a baseband signal. 7

Unit - III

3. a) State sampling theorem. 2
   b) Describe delta modulation. 2
   c) Discuss differential PCM. 3
   d) Compare time division multiplexing and frequency division multiplexing. 7

OR

Discuss the term signal to Noise ratio, Companding, Data rate, Barred rate, Bit rate. 7

Unit - IV

4. a) Discuss the binary phase shift keying. 2
   b) What is differential phase shift keying? 2
   c) Discuss the probability of error in case of BPSK. 3
   d) Draw the base band signal receiver. Discuss the reduction of the probability of error then it. 7

OR

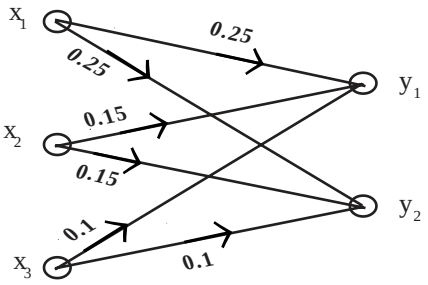
Describe MODEM in short. 7

Unit - V

5. a) What is entropy? 2
   b) Discuss marginal and conditional entropies. 2
   c) Describe Shannon theorem. 3
   d) Describe error detection and correction codes. 7

OR

Find the mutual information for the channel as shown below. 7



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