Total No. of Questions :5] *[Total No. of Printed Pages :2*

Roll No .....

EC - 503

B.E. V Semester

Examination, June 2015

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 questions 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) Define variance and standard deviation of random variables.
   b) What is the error function?
   c) Write down the central limit of theorem.
   d) Explain the cumulative distribution function and probability density function.

   OR

   Write a short note on Power Spectral Density of digital data.

Unit-II

2. a) Explain Nyquist rate.
   b) What do you understand by quantization?
   c) What is the function of companding?
   d) Explain Pulse Amplitude Modulation.

   OR

   Describe the Adaptive Delta Modulation.

Unit-III

3. a) Define Binary PSK.
   b) Explain MSK.
   c) Write a short on Binary FSK of frequency shift keying.
   d) Explain differentially encoded PSK.

   OR

   Describe the Quadrature Amplitude shift keying.

Unit-IV

4. a) What is the pulse shaping to reduce inter channel and inter symbol interference?
   b) Explain the probability of error.
   c) What do you understand by Nyquist criterion and partial response signalling.
   d) Describe the quadrature partial response encoder decoder.

   OR

   Explain the optimum receiver for both baseband and passband receiver.

Unit-V

5. a) Define information theory.
   b) What is the channel capacity?
   c) Explain Huffman coding.
   d) Describe the uncertainty and information of source coding.

   OR

   Explain the information capacity theorem of channel coding.

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