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

Roll No .....

EC-501

B.E. V Semester

Examination, December 2016

Voice and Data 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.

1. a) What do you understand by caller identification?
   b) What are the units of power measurements?
   c) Briefly explain standard telephone set.
   d) Describe local subscriber loop and explain the telephone circuit for it.

OR

Describe the following signalling manages:

i) Altering ii) Supervising

iii) Controlling iv) Addressing

2. a) Define trunk circuit.
   b) What is TDM?
   c) Explain public telephone network.
   d) Explain common channel signalling system number 7. Also give its network functions.

OR

Explain the working of automatic exchanges with block diagram.

3. a) What do you understand by codecs?
   b) What is statistical TDM?
   c) Compare WDM and D-WDM.
   d) Describe in detail the formation of master group.

OR

Describe FDM in detail. What is FDM hierarchy?

4. a) What is line configuration?
   b) What do you understand by digital to digital encoding?
   c) Briefly explain Shannon capacity.
   d) Calculate the maximum data rate for a voice grade line with a Bandwidth of 4kHz and S/N ratio of 10000:1. Also find maximum data rate if the S/N ratio is now enhanced to 50dB.

OR

What do you mean by transmission media? Discuss guided and unguided media.

5. a) What is checksum error?
   b) What is virtual circuit switching?
   c) Explain vertical redundancy checking.
   d) An (8, 4) linear block code is constructed by shortening a (15,11) hamming code generated by the generator polynomial $g(p) = p^4 + p + 1$.
      i) Construct the code words of the (8,4) code and list them.
      ii) What is the minimum distance of (8, 4) code?

OR

Briefly describe circuit switching.

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