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EC–501(N)

B. E. (Fifth Semester) EXAMINATION, Dec., 2010

(New Scheme)

(Electronics & Communication Engg. Branch)

VOICE COMMUNICATION

[EC – 501(N)]

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt all questions. All questions carry equal marks. Internal choice is given in each question and marks alloted are given in front of it.

1. (a) Explain the DTMF (Dual Tone Multiple Frequency) key pad layout and frequency allocation used in it. 10

   (b) What is Channel Noise ? Explain Cross Talk and it sub-types. 10

   Or

   (a) Explain how caller ID operates and when it is used ?

   10

   (b) Draw the block diagram of a telephone system and briefly describe the essential components of a telephone set. 10

2. (a) Explain how the call is set up using SS7 signaling network. 10

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(b) Briefly describe Interoffice trunk, Tandem trunk and Tandem switches. 10

Or

(a) Describe the formation of Group, Super group, and Master group in brief. 10

(b) Explain the telephone switching hierarchy in details.
10

3. (a) Briefly explain the working of CODEC and COMBO chips. 10

(b) Write down the various advantages and disadvantages of digital voice network. 10

Or

(b) Explain the term Quantization. Briefly describe the Time division multiplexing of PCM signals. 10

(b) What is meant by digital carrier line encoding ? What factors must be considered for selecting line encoding format ? Explain. 10

4. (a) Contrast Bit and Word Interleaving. Explain the term Inter Symbol Interference. 12

(b) A terminal multiplexer has six 1200 bps and n 300 bps terminals connected to it. The out going line is 9600 bps. What is the maximum value of n ? 8

Or

(a) Explain in details binary N-Zero substitutions. 10

(b) Explain the various types of Digital Carrier Frame synchronization in brief. 10

5. (a) Calculate the maximum access time that can be allowed for the data and control memories in a TSI

switch with a single input and single output trunk multiplexing 2500 channels. Also estimate the cost of switch and compare it with that a single stage space division switch.   12

(b) Write a short note on the Blocking Probabilities.   8

Or

(a) Explain Digital Cross Connect (DCC) in detail.   10

(b) Explain the operation of four wire switching in details.

10