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**EC - 501**

**B.E. V Semester**

Examination, December 2013

**Voice and Data Communication**

**Time : Three Hours**

**Maximum Marks : 70**

**Note:** Attempt One question from each unit.  
All questions carry equal marks.

**Unit - I**

1. a) List the essential components used in a standard telephone set. Show them with the help of a block diagram. Briefly explain these components. 7
- b) Define and explain cross talk. Describe three types of cross talks in short. 7

OR

2. a) Draw the block diagram of an electronic telephone. Explain its various blocks. 7
- b) Explain various types of voice frequency circuit arrangements. 7

**Unit - II**

3. a) Compare local central office telephone exchange and operator assisted local exchanges. 7
- b) Explain the hierarchy of switching offices. 7

OR

4. a) With an example describe a telephone numbering plan. 7

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- b) What is common channel signaling system number 7(SS7)? Give its network functions. 7

**Unit - III**

5. a) With the help of examples, explain line coding in detail. 7
- b) Differentiate between FDM and WDM. 7

OR

6. a) With the help of a block diagram, explain multichannel TDM system. 7
- b) Compare between bit interleaving and word interleaving. 7

**Unit - IV**

7. a) Write notes on: 7
- (i) Interface Standards (ii) Modem
- b) Explain and prove Shannon's theorem. 7

OR

8. a) Explain all the seven layers and their functions of OSI. 7
- b) Describe DTE-DCE interface. Distinguish between guided media of transmission with its unguided media. 7

**Unit - V**

9. a) Explain stop-and-wait ARQ and selective- Repeat ARQ? 7
- b) Compare the processes of virtual and datagram switching. 7

OR

10. a) Compute the CRC-4 character for 1100 0110 101101 using a divisor constant of 10011. 7
- b) Describe message switching. Compare it with circuit and packet switching. 7

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