



T.E. (Computer) (Semester – I) Examination, 2010
DATA COMMUNICATION
(2008 Course) (New)

Time : 3 Hours

Max. Marks : 100

Instructions : 1) Answer 3 questions from Section I and 3 questions from Section II.

2) Neat diagrams must be drawn *wherever* necessary.

3) Assume suitable data, if *necessary*.

4) Write answer in *separate* answer book for *each* Section.

SECTION – I

1. a) With help of block diagram, explain BFSK transmitter and receiver. 8
b) Explain WDM and CDMA multiplexing techniques. 8

OR

1. a) What is FSK ? Explain FSK generation, bandwidth of FSK signal and detection of FSK. 8
b) Explain Quadrature Amplitude Modulation and Phase Modulation. 8
2. a) Explain with block diagram PCM Encoder and decoder. 8
b) Describe adaptive quantization with forward estimation and backward estimation. 8

OR

2. a) What is mean by quantization noise ? Discuss the factors in which it depends and techniques used for reducing its effects. 8
b) Explain how adaptive delta modulation improve the tolerance to slope overload. 8
3. a) List and explain all types of ARQ system. 10
b) What is Shannon's information Rate ? Why it is difficult to achieve ? 4
c) Define information rate and write unit of information rate. 4

OR

3. a) Explain following terms related to codes : 10
i) Code word ii) Code rate iii) Hamming weight of code word
iv) Code efficiency v) Hamming distance
b) Explain cyclic redundancy check code. 4
c) Explain why error detection and correction required. 4



SECTION – II

4. a) Explain Bluetooth protocol architecture. 8
b) Write short notes on PSTN. 8

OR

4. a) Explain with diagram 802.16 protocol stack and frame format. 8
b) What is VLAN ? State the advantages of VLAN. Explain how to setup VLAN using Layer-2 switches. 8
5. a) List and explain wireless transmission media. 8
b) Write the comparison between circuit switching, packet switching and message switching. 8

OR

5. a) Write the functions of repeater, hub, NIC, Media converter, transceiver, switch, router and bridge. 8
b) Explain the types of frequency hopping. 8
6. a) Explain piggybacking with advantages and disadvantages. 6
b) Explain frame types of HDLC. 6
c) Write the problems in static and dynamic channel allocation. 6

OR

6. a) Explain persistent and non-persistent CSMA. 6
b) Write the short notes on stop-and-wait protocol. 6
c) Describe limited contention protocol in details. 6