Total No of Questions: [12] *SEAT NO. :*

[Total No. of Pages : *2*]

T.E. 2008 (Data Communication)

Subject Code: 310242

(Semester - I)

Time: 3 Hours ***Max. Marks : 100***

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume Suitable data if necessary***

SECTION I

Q1) a) How BPSK Signal is generated? Explain the scheme to recover baseband signal in BPSK [10]

b) Explain SNR; channel Bandwidth & Rate of Communication. The Power of Signal is 10mW & the Power of Noise is 1mW. What are the values of SNR, $SNR_{dB?}$ [8]

OR

Q2) a) Explain the effect of Gaussian noise on digital transmission. [10]

b) Explain Quadrature Amplitude Modulation & Phase Modulation. [8]

Q3) a) Find BW for error free transmission of output of source if S/N=20dB. [8]

b) What is uniform quantization? What is the drawback in it. How to overcome this drawback? [8]

OR

Q4) a) Explain the sampling theorem & details of reconstructing a signal from its samples. [8]

b) With the help of block diagram explain working of Adaptive Delta Modulation. [8]

Q5) a) What is ARQ? Explain in short go-back-n and Selective Repeat Methods. [8]

b) Define Shanons Information Rate? Why it is difficult to achieve? [8]

OR

Q6) a) Write short note on linear block codes. [8]

b) Explain cyclic redundancy check code and explain why error detection and correction is required. [8]

SECTION II

Q7) Write short note on (any three): [18]

a) Cellular telephony
b) Frame Relay
c) Bluetooth
d) Network Topology

OR

Q8) a) Comment on TCP/IP protocol stack. How it is different than OSI/ISO seven layers Model? [10]

b) Explain in brief the categories of standard Ethernet. [8]

Q9) a) Compare optical fiber with coaxial and twisted pair cable. [8]

b) Write the functions of Repeater, Hub, NIC, Media Converter, Router, Bridge & Switch. [8]

OR

Q10)	a)	What are the different data rates & its uses for unshielded twisted pair cables?	[8]
	b)	Explain different types of frequency hopping.	[8]
Q11)	a)	What is static and dynamic channel allocation?	[8]
	b)	How does pure ALOHA prevent congesting the channel? Explain in Detail.	[8]
		OR	
Q12)	a)	Compare and contrast the controlled access protocol.	[8]
	b)	Define Channelization. List & explain 3 protocols in this category	[8]