2124
B. E. (Computer Science and Engineering)
Fifth Semester
CS-501: Data Communication and Networks

Time allowed: 3 Hours   Max. Marks: 50

NOTE: *Attempt* <u>*five*</u> *questions in all, including Question No. I which is compulsory and selecting two questions from each Part.*

x-x-x

I			
	i)	Draw the diagram for Polar bi-phase differential Manchester encoding scheme for 010011.	(1)
	ii)	What is IEEE 802.11?	(1)
	iii)	What is importance of Discard Eligibility (DE) bit in Frame-relay?	(1)
	iv)	If the throughput at the connection between a device and transmission medium is 5Kbps, how long does it take to send 100,000 bits out of this device?	(1)
	v)	What is Broad band ISDN?	(1)
	vi)	Briefly explain the concept of Cell Switching.	(1)
	vii)	Briefly explain the significance of Nyquist Bit Rate for a noiseless channel.	(1)
	viii)	What is IEEE 802.3u?	(1)
	ix)	Briefly explain the concept of non persistent strategy of CSMA.	(1)
	x)	List the different types of propagations for wireless communication media.	(1)

PART-A

II	a)	Explain the differences between IEEE 802.4 and IEEE 802.5 standards in detail.	(5)
	b)	Explain Direct Sequence Spread Spectrum (DSSS) with original signal as 010 and spreading code is of n=11 bit chip sequence with pattern 01101011101. (Assume that original signal and the chips in chip generator use polar NRZ encoding)	(5)
III	a)	Explain the difference between In-Channel Signaling and Common Channel Signaling.	(5)
	b)	Explain differences between FDM, TDM and WDM multiplexing techniques.	(5)
IV	a)	Explain different types of transmission impairments.	(5)
	b)	Explain differences between Circuit Switching and Packet switching along with their timing diagrams.	(5)

PART-B

V	a)	Explain working of Selective Repeat Sliding Window protocol in case of lost acknowledgement.	(5)
	b)	Explain Hamming error correction protocol for single bit error and burst error with example.	(5)
VI	a)	Explain differences between OSI Reference Model and TCP/IP reference model.	(5)
	b)	Explain HDLC protocol of Data link layer in detail along with its frame format.	(5)
VII	a)	What is difference between ARP protocol and RARP protocol in local area network?	(5)
	b)	100 Stations on a pure ALOHA network share 1-Mbps Channel. If frames are 1000 bits long, Find the throughput if each station is sending 10 frames/sec.	(5)

x-x-x