

2074  
B. E. (Computer Science and Engineering)  
Fifth Semester  
CS-501: Data Communication and Networks

Time allowed: 3 Hours

Max. Marks: 50

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

x-x-x

I	i) Briefly explain ISDN PRI Service.	(1)
	ii) What is Spread Spectrum?	(1)
	iii) The attenuation of a signal is -10 dB. What is final signal power if it was originally 5 W?	(1)
	iv) List the different types of propagations for wireless communication media.	(1)
	v) What are different levels of X.25?	(1)
	vi) What is the bit rate for a signal in which 10 bits last 20 $\mu$ Sec?	(1)
	vii) Briefly explain the concept of ARP (Address Resolution Protocol).	(1)
	viii) What is Gigabit Ethernet?	(1)
	ix) What is local loop?	(1)
	x) Show the diagram for Polar bi-phase Manchester encoding scheme for 010011.	(1)
PART-A		
II	a) Explain the differences between MEO and LEO Satellites.	(5)
	b) Explain routing in Circuit Switched networks.	(5)
III	a) Explain differences between In-band and Out-of-band signaling.	(5)
	b) Explain different advantages, disadvantages and applications of Radio Waves in wireless transmission.	(5)
IV	a) Explain Characteristics and working of SS7 Signaling Protocol.	(5)
	b) Explain different types of serial and parallel transmission modes in data Communication.	(5)
PART-B		
V	a) Calculate Walsh Table $W_8$ from $W_1$ using $W_1 = [+1]$ for CDMA. Also prove Orthogonal properties of Walsh chips for $W_8$ .	(5)
	b) What is difference between Pure ALOHA and slotted ALOHA?	(5)
VI	a) Explain ATM protocol reference model in detail with diagram.	(5)
	b) Explain difference between Narrow band ISDN and Broad band ISDN in detail.	(5)
VII	a) Explain Go Back-n Sliding window protocol in case of lost frame and lost acknowledgement.	(5)
	b) Given the data-word as follows: $x^{10} + x^9 + x^7 + x^5 + x^4 + x^3$ and CRC divisor as below: $x^3 + x^2 + 1$ Show the generation of CRC codeword at sender side using polynomial division only. Also show checking of the CRC codeword at the receiver side assuming no errors using polynomial division.	(5)

x-x-x