

2123  
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. 1 which is compulsory and selecting two questions from each Part.

x-x-x

I	i) What is 100Base-T4?	(1)
	ii) Briefly explain Dynamic alternate routing in circuit switched networks.	(1)
	iii) What is period of a natural satellite that is located at an orbit approximately 384000 km above the surface of Earth using Kepler's law? (Take radius of Earth as 6378 km)	(1)
	iv) List the different types of propagations for wireless communication media.	(1)
	v) What is FDDI?	(1)
	vi) A signal with 200 milliwatts power passes through 10 devices, each with an average noise of 2 microwatts. What is SNR?	(1)
	vii) What is significance of Nyquist Bit Rate for a noiseless channel?	(1)
	viii) What is importance of FECN and BECN bits in frame relay header?	(1)
	ix) Briefly explain the concept of RARP (Reverse Address Resolution Protocol).	(1)
	x) What is Cell Switching?	(1)
<b>PART-A</b>		
II	a) Explain the differences between TDM based switch and Multistage space division switch.	(5)
	b) What is spread spectrum? Explain different types of spread spectrum with their diagrams.	(5)
III	a) Explain the differences between IEEE 802.4 and IEEE 802.5.	(5)
	b) Show the diagrams for Polar NRZ-L and NRZ-I encoding schemes for 01001110.	(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)
<b>PART-B</b>		
V	a) We have pure ALOHA network with 100 stations. If frame transmission time $T_f = 1\mu$ sec. What is the number of frames/sec each station can send to achieve the maximum efficiency?	(5)
	b) Explain the difference between Hubs, Bridges and Switches.	(5)
VI	a) Explain ATM protocol reference model in detail with diagram.	(5)
	b) Explain difference between TDMA, FDMA and CDMA Channelization protocols.	(5)
VII	a) Explain HDLC protocol of Data link layer in detail along with its frame format.	(5)
	b) Given Explain Hamming error correction protocol for single bit error and burst error with example.	(5)

x-x-x