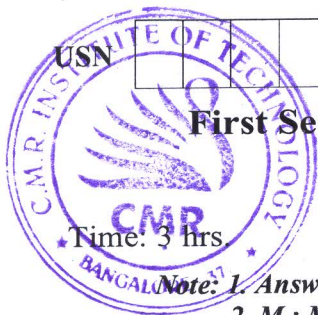




First Semester MCA Degree Examination, June/July 2024 Computer Networks

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

Module – 1			M	L	C
Q.1	a.	What is data communication? Explain components of a data communication systems.	10	L2	CO1
	b.	Define computer networks and categorize its types, advantages disadvantages.	10	L1	CO1
OR					
Q.2	a.	Categorize the four basic topologies in terms of line configuration.	10	L2	CO1
	b.	Illustrate different layers in OSI model.	10	L2	CO1
Module – 2					
Q.3	a.	Apply NRZ, NRZI, Manchester encoding to the following bit stream: 0010111101000010.	10	L3	CO1
	b.	Distinguish baseband transmission and broad band transmission.	10	L2	CO1
OR					
Q.4	a.	Analyze the different methods for digital to analog conversion.	10	L4	CO2
	b.	Categorize and write various transmission modes with examples.	10	L2	CO2
Module – 3					
Q.5	a.	Compare and write the techniques of circuit switching and message switching with examples.	10	L2	CO3
	b.	List and explain four major components of a packet switch and their functions.	10	L2	CO3
OR					
Q.6	a.	Explore the services provided by the physical layer 2 with multiplexing and demultiplexing in brief.	10	L4	CO3
	b.	Illustrate spread spectrum and its two techniques with proper examples.	10	L2	CO3
Module – 4					
Q.7	a.	A bit stream 11001001 is transmitted using the standard CRC method. The generator polynomial is $x^3 + 1$. i) What is the actual bit transmitted? ii) Suppose the third bit from the left is inverted during transmission. How will the receiver detect the error?	10	L3	CO4

	b.	Analyze the error detection technique of checksum and find what kind of arithmetic is used to add data item in checksum calculation.	10	L4	CO4
OR					
Q.8	a.	Write the block coding and linear block coding with example.	10	L2	CO3
	b.	Write about Hamming code and write how the technique of error correction is done using hamming code by taking an example.	10	L3	CO3
Module – 5					
Q.9	a.	What is framing? Explain the types of framing and methods of framing.	10	L2	CO2
	b.	What are the protocols discussed for noiseless channels with examples?	10	L1	CO2
OR					
Q.10	a.	Compare and contrast the GO-Back-N ARQ protocol with selective repeat ARQ.	10	L4	CO4
	b.	Compare and contrast HDLC with PPP, which one is byte oriented, which one is bit oriented?	10	L4	CO4

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