Course Code: 1950405 **Roll No:** **MLRS- R19**

MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
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III B.Tech I Sem Regular End Examination, January 2022

Data Communication and Networks

(ECE)

Time: 3 Hours. **Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.
2. In Part – A, answer all questions which carries 20 marks.
3. In Part – B, answer any one question from each unit.
Each question carries 10 marks and may have a, b as sub questions.

PART- A

(10*2 Marks = 20 Marks)

1.	a)	What is the difference between half duplex and full duplex mode.	2M	CO1	BL1
	b)	Differentiate data and information.	2M	CO1	BL2
	c)	A pure ALOHA network transmits 200-bit frames on a shared channel of 200kbps. What is the throughput if the system (all stations together) produces 1000 frames per second?	2M	CO2	BL2
	d)	Discuss the design issues of data link layer.	2M	CO2	BL2
	e)	Why class C is commonly used Network class?	2M	CO3	BL1
	f)	Write short note on ICMP.	2M	CO3	BL1
	g)	What is multiplexing in transport layer?	2M	CO4	BL1
	h)	Draw UDP headers.	2M	CO4	BL1
	i)	What is the use of FTP?	2M	CO5	BL1
	j)	Write short notes on URL.	2M	CO5	BL1

PART- B

(10*5 Marks = 50 Marks)

2	a)	Define protocol and identify different elements of a protocol.	5M	CO1	BL2
	b)	Explain with an example the need for layered architecture.	5M	CO1	BL4
		OR			
3		Discuss in detail about the layers in OSI model with a neat diagram.	10M	CO1	BL2
4	a)	Explain error detection and error correction in Data Link layer.	5M	CO2	BL4
	b)	What is CRC? Using CRC, consider the 4-bit generator polynomial G = 1001 and message M= 10101010. What is the final message transmitted to the other end. (i.e., Find the remainder)?	5M	CO2	BL2
		OR			
5		List out the different channelization protocols. Explain CDMA.	10M	CO2	BL4

6	a)	Define routing. What are the goals of routing algorithm?	5M	CO3	BL2
	b)	A host in an organization has an IP address 200.45.34.56 and subnet address mask 255.255. 240.0. What is subnet address?	5M	CO3	BL3
		OR			
7		Draw IP v6 datagram format. Mention the significance of each field.	10M	CO3	BL2
8	a)	Explain three phases of congestion control in TCP.	5M	CO4	BL4
	b)	With a neat sketch, explain the TCP segment.	5M	CO4	BL4
		OR			
9		Discuss the services and features of TCP.	10M	CO4	BL2
10	a)	What is the use of DNS? Explain how DNS works.	5M	CO5	BL4
	b)	What is an Electronic Mail? Explain the architecture of E-Mail.	5M	CO5	BL4
		OR			
11		Illustrate HTTP transaction between the client and server.	10M	CO5	BL4

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