CIE: Internal Assessment Details

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Internal Assessment Question Paper – 1
Ramaiah Institute of Technology
(Autonomous Institute, Affiliated to VTU)

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Department of CSE Programme : BE Term: Mar-June 2021 Course: Data Communication and Networking Course Code: CS44 CIE: Test 1 Sem: IV Max Marks: 30 Date: 10/6/2021 Portions for Test: (L1 to L22)

Instructions to Candidates:

· **Question 1 is compulsory. Answer any 2 full questions.**

· **Each question carries 15 marks. Mobile are strictly banned**

Sl#	Question	Marks	Bloom's Level	CO Mapping
1	a. Explain with neat diagram logical connections between the layers of TCP/IP protocol suite.	5	L2	CO1
	b. Draw the graph using NRZ-I and Differential Manchester scheme for the data stream 1001101010, assuming that the last signal level has been positive.	5	L3	CO2
	c. Given the dataword 10100111 and the divisor 10111. Show the generation of the CRC codeword at the sender site (using polynomial division) and checking of codeword at the receiver site (assume no error).	5	L3	CO3
2	a. Justify "In selective repeat protocol the size of the sender and receiver window should be 2^{m-1}" with suitable example.	5	L4	CO3
	b. Illustrate how CSMA/CA is different from CSMA/CD with suitable example.	5	L2	CO3
	c. Solve the following: i. We have a channel with 4 KHz bandwidth. If we want to send data at 100 Kbps what is the minimum SNR_{dB}? What is the SNR? ii. A signal with 200 milliwatts power passes through 10 devices, each with an average noise of 2 microwatts. What is the SNR? What is the SNR_{dB}?	5	L3	CO1
3	a. Ten sources, six with a bit rate of 200 kbps and four with a bit rate of 400 kbps, are to be combined using multilevel TDM with no synchronizing bits. Answer the following questions about the final stage of the multiplexing: i. What is the size of a frame in bits? ii. What is the frame rate? iii. What is the duration of a frame? iv. What is the data rate?	5	L3	CO2
	b. Discuss various advantages, disadvantages and applications of Bus topology.	5	L2	CO1

	c. Differentiate between TDMA and FDMA channelization method.	5	L2	CO3

Course Outcomes meant to be assessed by the first IA Test:

CO1: Identify the different types of network topologies and protocols (PO-1, 2, 3, 4,

PSO-1). CO2. Differentiate between digital and analog transmissions (PO-1, 2, 3, 4, PSO-1).

CO3. Solve problems in error detection and correction at data link layer (PO-1, 2, 3, 4, PSO-1)