



# **MARRI LAXMAN REDDY**

## **INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi &amp; Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade &amp; Recognized Under Section 2(f) &amp; 12(B) of the UGC act, 1956

III B.Tech I Sem Supply End Examination, August 2022

**Data Communication and Computer Networks**

(IT)

**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 are the key elements of protocols?   | 2M | CO1 | L1 |
| b)    | Write a short note on limitations of Power lines as a transmission media.                   | 2M | CO1 | L1 |
| c)    | List the responsibilities of Data Link Layer.   | 2M | CO2 | L2 |
| d)    | What is Piggy Backing?  | 2M | CO2 | L2 |
| e)    | What are the restrictions that are imposed on classless addressing by Internet Authorities? | 2M | CO3 | L1 |
| f)    | Draw the message format of IGMP.  | 2M | CO3 | L2 |
| g)    | Differentiate TCP and UDP.  | 2M | CO4 | L4 |
| h)    | Why UDP is called CL protocol?  | 2M | CO4 | L4 |
| i)    | List three main divisions of Domain Name System.  | 2M | CO5 | L2 |
| j)    | Give the job of Proxy server with HTTP.   | 2M | CO5 | L2 |

**PART- B****(10\*5 Marks = 50 Marks)**

- |   |    |  |    |     |    |
|---|----|--|----|-----|----|
| 2 | a) | List the principle differences between connection-oriented communication and connectionless communication. | 5M | CO1 | L4 |
|   | b) | Describe in detail about Light wave transmission.  | 5M | CO1 | L2 |

**OR**

- |   |    |  |     |     |    |
|---|----|--|-----|-----|----|
| 3 |    | Explain the functionality of each layer in OSI reference model.          | 10M | CO1 | L2 |
| 4 | a) | Differentiate in between data link layer protocols HDLC and PPP.         | 5M  | CO2 | L4 |
|   | b) | Explain IEEE 802.11 standard for Ethernet with the help of frame format. | 5M  | CO2 | L2 |

**OR**

- 5 a) Discuss about Protocols used in Noiseless Channels for Flow and Error control at data link layer. 5M C02 L6  
b) Explain about various multiple access protocols. 5M C02 L4

- 6 a) Illustrate Link State Routing Algorithm with example. 5M C03 L2  
b) What is the format of IPv4 header? Describe the significance of each field. 5M C03 L2

**OR**

- 7 Is ICMP a companion of the IP protocol? Justify your answer. 10M C03 L5

- 8 a) Demonstrate the process of Node to Node delivery in a network. 5M C04 L2  
b) Elucidate congestion control in datagram subnets. 5M C04 L2

**OR**

- 9 a) How integrated services are differed from differentiated services? Explain. 5M C05 L4  
b) Draw and Explain the structure of TCP Header. 5M C05 L2

- 10 a) Compare and Contrast E-mail Protocols POP3 and IMPA4. 5M C05 L4  
b) Draw the Architectural Overview of WWW and Explain. 5M C05 L2

**OR**

- 11 a) Explain the mechanism of FTP for copying a file from one host to another. 5M C05 L5  
b) Give the classification of Network Management functions. 5M C05 L4

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