

R16

Code No: 135AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, January/February - 2023

DATA COMMUNICATION AND COMPUTER NETWORKS

(Common to CSE, IT)

Time: 3 Hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) 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

(25 Marks)

1. a) What are virtual circuit networks? [2]
- b) Differentiate between OSI reference model and TCP/IP reference model. [3]
- c) How CSMA/CA is different from CSMA/CD? [2]
- d) Mention the problems associated with Go-Back-N protocol. [3]
- e) State the need for routing protocols. [2]
- f) How can NAT help in address translation? [3]
- g) Define the term congestion. [2]
- h) Differentiate between TCP and UDP protocols. [3]
- i) What is meant by Domain Name system? [2]
- j) Explain FTP protocol in brief. [3]

PART – B

(50 Marks)

2. What are the different layers in the OSI Reference Model? Explain the functionalities of each Layer. [10]

OR

3. a) Describe different types of Guided and unguided Transmission media. [10]
- b) What is the role of the address field in a packet traveling through a virtual-circuit network? [5+5]

4. A bit stream 11100011 is transmitted using the standard CRC method. The generator polynomial is x^4+x^3+1 . What is the actual bit string transmitted? [10]

OR

5. Discuss about IEEE 802.3 and IEEE 802.11. [10]

6. Explain Link State Routing algorithm to find the shortest route. Give example. [10]

OR

7. A large number of consecutive IP address are available starting at 198.16.0.0. Suppose an organization has four blocks that are B1, B2, B3, and B4 are requiring 4000, 2000, 4000 and 8000 addresses respectively. After providing of IP addresses to the every block, what are the first IP address, last IP address and subnet mask of each block. [10]

QA QA QA QA QA QA QA Q

8. Explain the TCP Connection establishment and termination using Timeline diagram.

[10]

QA QA QA **OR** QA QA QA QA QA Q

9. Explain leaky bucket algorithm to explain the congestion control in network.

[10]

10. Describe the operational model of HTTP protocol.

[10]

OR

11. Describe in detail about the following:

a) SMTP

b) SNMP.

[5+5]

QA QA QA QA QA QA QA Q

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QA QA QA QA QA QA QA Q

QA QA QA QA QA QA QA Q

QA QA QA QA QA QA QA Q

QA QA QA QA QA QA QA Q

QA QA QA QA QA QA QA Q