Code No: 117BY

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November/December - 2016

COMPUTER NETWORKS

(Common to ECE, BME)

Time: 3 Hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A

(25 Marks)

1.a) Write short notes on interfaces. [2]
b) Explain the characteristics of twisted pair cable. [3]
c) What is the difference between router and gateway? [2]
d) What is meant by collision free protocols? [3]
e) Mention the design issues of network layer. [2]
f) Difference between connectionless and connection oriented networks. [3]
g) Explain about CIDR. [2]
h) Explain the functions of Transport layer. [3]
i) Explain about TELNET. [2]
j) Write the application layer paradigms. [3]

PART-B

(50 Marks)

2.a) Explain the functions of various layers in ISO-OSI reference model.
b) Explain the term sliding window. Also illustrate and explain the operation of selective repeat. [5+5]

OR

3.a) Discuss about unguided transmission media.
b) What are the different types of error detection methods? Explain the CRC error detection technique using generator polynomial x^4+x^3+1 and data 11100011. [5+5]

4.a) Explain the operation of source Routing Bridges.
b) Explain the working of CSMA/CD. [5+5]

OR

5.a) Discuss in brief the MAC frame structure for IEEE 802.3
b) Explain in detail the operation of pure ALOHA and slotted ALOHA. [5+5]

6.a) Explain the Dijkstra's Shortest Path Routing Algorithm with an example.
b) Give the general principles of various congestion control algorithm. [5+5]

OR

7. What is Congestion control? How it is implemented in Network Layer? What is the role of Choke packet in managing congestion? [10]

8.a) Explain the error control mechanism in transport layer.

b) Explain about Reverse Address Resolution Protocol. [5+5]

OR

9.a) How are connection establishment and connection release managed at the transport layer? Explain.

b) With a neat diagram explain the IPv6 header format. [5+5]

10.a) Compare and Contrast the UDP header and the TCP header.

b) Explain the client server model. [5+5]

OR

11.a) What is Electronic mail? Explain the two scenarios of architecture of E-Mail.

b) Explain the TCP service model. [5+5]

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