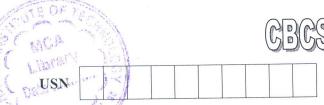
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Seventh Semester B.E. Degree Examination, Jan./Feb. 2023 **Computer Networks**

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- What is Physical Topology? With a neat diagram, explain the various types of physical (10 Marks) topologies available in computer networks.
 - b. With a neat diagram, explain the significance of layers in TCP/IP protocol suite. (10 Marks)

- (06 Marks) Explain LAN and WAN with the help of neat diagrams.
 - With a neat diagram, explain the five components of Data Communication. (06 Marks)
 - Explain encapsulation and decapsulation in TCP/IP model with the help of a neat diagram. (08 Marks)

Module-2

- What is an ARP? Explain the operation of ARP and its packet format with suitable 3 (10 Marks)
 - b. Explain stop and wait protocol with a neat FSM diagram. Also explain how sequence and acknowledge numbers prevent duplication of frames with necessary diagrams.

OR

- A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps 4 bandwidth. Find the throughput if the system produces
 - (i) 1000 frames per second
- (ii) 500 frames per second
- (iii) 250 frames per second? (06 Marks)
- b. Explain CSMA/CA protocol with a flow diagram.

(08 Marks)

Explain the Ethernet Frame format of standard Ethernet.

(06 Marks)

Module-3

- a. Explain with a neat diagram, the virtual circuit packet switched network and its various 5 (10 Marks) phases of operation.
 - b. With a neat diagram explain IPv4 Datagram format.

(10 Marks)

- (10 Marks) Explain with an example, the Distance Vector Routing algorithm.
 - b. Explain with an example, Link State Routing and also apply Dijkstra algorithm to find least (10 Marks) cost path tree.

Module-4

- Explain connectionless and connection oriented protocols in transport layer. (10 Marks)
 - With a neat diagram, explain state transition diagram of TCP.

(10 Marks)

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OR

8 a. Explain Go-Back-N protocol along with sliding window diagrams. (10 Marks)
b. Explain TCP connection establishment using three way hand shaking. (10 Marks)

Module-5

9 a. Explain World Wide Web and Web documents with necessary diagrams. (10 Marks)
b. Explain the Architecture of Electronic mail with a neat diagram. (10 Marks)

OR

10

a. Explain with an example, the working of Hyper Text Transfer Protocol.
b. What is Name-address resolution? With a neat diagram, explain the various types of resolution that are available.

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