

# CBCS SCHEME

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21EC53

## Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025 Computer Communication Networks

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain the concept of packet switched and circuit switched network. (10 Marks)
- b. What is physical topology? With illustration explain the various types of physical topology. (10 Marks)

OR

- 2 a. Explain the concept of encapsulation and decapsulation in protocol layering in the internet. (08 Marks)
- b. With necessary illustration explain the different data flow techniques used for communication between two devices. (06 Marks)
- c. Describe the LAN and WAN with neat sketches. (06 Marks)

### Module-2

- 3 a. Describe the process of framing, flow control and error control in the Data Link Control (DLC) services. (10 Marks)
- b. Explain the two kinds of services defined by the IEEE 802.11 wireless LAN standard. (10 Marks)

OR

- 4 a. Explain the working of CSMA method used in MAC sublayer with a sketch of the space/time model of collision. (10 Marks)
- b. With a suitable example network scenario. Explain the formation of a VLAN. What characteristics of VLAN are used for grouping workstations into a VLAN? (10 Marks)

### Module-3

- 5 a. Explain the datagram approach and virtual circuit approach in forwarding the packets in the network layer with a neat sketch. (10 Marks)
- b. With necessary illustration explain the concept of link state routing. (10 Marks)

OR

- 6 a. Write a note on the following services of the network layer.
  - i) Packetization
  - ii) Routing and forwarding
  - iii) Error control
  - iv) Flow control
  - v) Congestion control. (10 Marks)
- b. Outline the three phases involved in data transfer in a connection oriented service. (10 Marks)

### Module-4

- 7 a. Discuss the various services offered by TCP with neat illustration. (10 Marks)
- b. Explain the working of Go-Back-N protocol. (10 Marks)

OR

- 8 a. Explain the features of TCP with suitable examples. (10 Marks)  
b. Explain the working of the selective repeat protocol. (10 Marks)

**Module-5**

- 9 a. What is the use of File Transfer Protocol (FTP)? Explain control connection and data connection in FTP. (10 Marks)  
b. Explain with example, the working of HTTP. (10 Marks)

OR

- 10 a. With suitable example explain the three phases of E-mail message transfer. (10 Marks)  
b. What is meant by resolution in DNS system? Explain with neat diagrams, the two resolution processes used to resolve the domain names and addresses. (10 Marks)

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