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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