USN | | | | | | | | | | | | **18EC71**

Seventh Semester B.E. Degree Examination, July/August 2022
Computer Networks

Time: 3 hrs.   Max. Marks: 100

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

Module-1

1 a. With a neat diagram, explain five components of data communication. (06 Marks)
   b. Explain the communication between two devices with data flow diagram. (06 Marks)
   c. Explain all the physical topology available in the network. (08 Marks)

OR

2 a. Explain circuit switched network and packet switched network with a neat diagram. (06 Marks)
   b. Explain TCP/IP protocol suite. (08 Marks)
   c. With neat diagram, explain the encapsulation and decapsulation in the internet. (06 Marks)

Module-2

3 a. With a neat diagram, explain Address Resolution Protocol (ARP) and ARP packet. (10 Marks)
   b. Explain the following : i) Byte stuffing and unstuffing
                              ii) Bit stuffing and unstuffing. (10 Marks)

OR

4 a. With neat diagram, explain stop and wait protocol, its FSM and flow diagram. (10 Marks)
   b. Explain CSMA and show the behavior of the three persistence methods of CSMA. (10 Marks)

Module-3

5 a. Explain with neat diagram datagram approach and virtual – circuit approach in packet switching. (14 Marks)
   b. An organization is granted block of addresses with the beginning address 14.24.74.0/24. The organization needs to have 3 subblocks of address to use in its three subnets : One subblock of 10 addresses. One subblock of 60 addresses and one subblock of 120 addresses. Design the subblocks. (06 Marks)

OR

6 a. Explain IPv4 datagram with neat figure. (10 Marks)
   b. Explain Link-State-Routing with its Link-State Database. (10 Marks)

Module-4

7 a. Explain Go-Back-N protocol with its FSM. (10 Marks)
   b. Explain Selective-Repeat protocol with its FSM. (10 Marks)

OR

8 a. Explain UDP services along with neat diagram of Pseudo header for checksum. (10 Marks)
   b. List the TCP features. Explain TCP segment format with diagram. (10 Marks)

Module-5

9 a. Explain the following with diagram : i) WWW   ii) HTTP   iii) FTP. (10 Marks)
   b. With neat architecture diagram explain E-mail. (06 Marks)
   c. Explain POP 3 with diagram. (04 Marks)

OR

10 a. Explain Local versus Remote logging in TELNET. (06 Marks)
   b. Explain DNS Name Space, DNS in the internet and resolution. (10 Marks)
   c. Explain the ways, the DNS can be attacked and how the security of DNS provided. (04 Marks)

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