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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 (10 Marks)
ii) Bit stuffing and unstuffing.

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)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.