USN | | | | | | | | | | |

21EC53

Fifth Semester B.E. Degree Examination, Dec.2023/Jan.2024
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. Outline the functions of various layers in TCP/IP with necessary diagram to show logical connection between layers. **(10 Marks)**
 b. Compare various physical topologies in a computer network. **(10 Marks)**

OR

2 a. Explain five components of data communication with a neat diagram. **(06 Marks)**
 b. Explain different types of data-flow with a neat diagram. **(06 Marks)**
 c. Explain different types of switched networks used in computer network with relevant diagram. **(08 Marks)**

Module-2

3 a. Explain character-oriented framing and bit-oriented framing with an example. **(10 Marks)**
 b. With a neat diagram, explain standard Ethernet frame format. **(10 Marks)**

OR

4 a. With a neat flow diagram and timing diagram, explain CSMA/CD. **(10 Marks)**
 b. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps, what is the through put if the system produces (all stations together):
  (i) 1000 frames per second
  (ii) 500 frames per second
  (iii) 250 frames per second **(06 Marks)**
 c. Explain implementation of standard Ethernet. **(04 Marks)**

Module-3

5 a. Explain classfull addressing in detail. **(06 Marks)**
 b. Explain with neat diagram, the various services provided by network layer. **(10 Marks)**
 c. Explain datagram approach, with connectionless service. **(04 Marks)**

OR

6 a. Explain datagram format with neat diagram. **(10 Marks)**
 b. Explain the operation of DHCP with neat diagram, also draw the FSM for the DHCP client. **(10 Marks)**

Module-4

7 a. Explain stop and wait protocol in flow diagram with neat diagram. **(10 Marks)**
   b. Explain connectionless and connection oriented protocols in transport layer. **(10 Marks)**

OR

8 a. Explain Go-back-N protocol, along with sliding window diagrams. **(10 Marks)**
   b. Explain Time-line diagram for a common scenario. **(10 Marks)**

Module-5

9 a. With neat diagram, explain the logical connection at the application layer. **(10 Marks)**
   b. Explain the formats of the request and response message. **(06 Marks)**
   c. Explain FTP with a neat diagram. **(04 Marks)**

OR

10 a. Explain about electronic-mail architecture. **(10 Marks)**
   b. Explain DNS Resolution and its types: (i) recursive resolution and (ii) iteration resolution. **(10 Marks)**

* * * * *