



# CBCS SCHEME

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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)

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.

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**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)

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