

# CBCS SCHEME



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18EC71

**Seventh Semester B.E. Degree Examination, Feb./Mar. 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. Describe significant services of all layers in TCP/IP protocol suite along with the encapsulation and decapsulation processes with necessary figures. (16 Marks)
- b. List different performance criteria of a network. (04 Marks)

**OR**

- 2 a. Explain different physical structures and networks topologies with the help of diagrams. (16 Marks)
- b. Distinguish TCP/IP model with OSI model. (04 Marks)

### Module-2

- 3 a. Describe various fields in the format of an ARP packet and explain how ARP sends request and response messages. (12 Marks)
- b. Write short notes on implementation of standard Ethernet topologies. (08 Marks)

**OR**

- 4 a. Describe the concept of bit stuffing and byte stuffing. (10 Marks)
- b. Explain CSMA/CD working with the help of flowchart. (06 Marks)
- c. List the characteristics of wireless LANs. (04 Marks)

### Module-3

- 5 a. Explain working of DHCP [Dynamic Host Configuration Protocol]. (08 Marks)
- b. Inspect the following MAC addresses and categories them as unicast, multicast and broadcast.
  - i) 4A : 30 : 10 : 21 : 10 : 1A
  - ii) 47 : 20 : 1B : 2E : 08 : EE
  - iii) EF : FF : 10 : 01 : 11 : 00
  - iv) FF : FF : FF : FF : FF : FF(04 Marks)
- c. Explain IPV4 datagram format with a neat diagram. (08 Marks)

**OR**

- 6 a. Explain a simple implementation of Networks Address Translation (NAT). (10 Marks)
- b. Explain distance vector routing algorithm using Bellman ford equations. (10 Marks)

### Module-4

- 7 a. Describe connectionless and connection – oriented services provided by the transport layer. (14 Marks)
- b. Describe the general services provided by UDP. (06 Marks)

**OR**

- 8 a. Explain working of Go-back-N protocol. (10 Marks)
- b. Describe sending and receiving buffers in TCP, and explain how segments are created from the bytes in the buffers. (10 Marks)

### Module-5

- 9 a. Explain the architecture and format of electronic mail. (10 Marks)
- b. Distinguish Local Logging and Remote Logging. (10 Marks)

**OR**

- 10 a. Explain persistent and non-persistent connections in HTTP. (10 Marks)
- b. Write a short note on DNS recursive and iterative resolutions. (10 Marks)

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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.