

# CBCS SCHEME



20MCA13

First Semester MCA Degree Examination, Jan./Feb. 2023

## Computer Networks

Max. Marks: 100

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

### Module-1

- 1 a. Draw the OSI network architecture. Explain each layer in detail. (10 Marks)  
b. Differentiate between connection oriented and connectionless service. (10 Marks)

OR

- 2 a. Explain the uses of Computer Networks. (10 Marks)  
b. Discuss about support for common services in network requirement. (10 Marks)

### Module-2

- 3 a. With neat diagram explain layering and protocol in network architecture. (10 Marks)  
b. How encapsulation is used in network? (10 Marks)

OR

- 4 a. Explain Internet architecture with neat diagram. (10 Marks)  
b. Discuss the following encoding techniques:  
i) NRZ ii) NRZI iii) Manchester iv) 4B/5B. (10 Marks)

### Module-3

- 5 a. Explain virtual circuit switching with an example network. (10 Marks)  
b. Discuss the following :  
i) ATM cell format ii) Source Routing. (10 Marks)

OR

- 6 a. Discuss about Spanning Tree algorithm with necessary diagrams. (10 Marks)  
b. Explain the following :  
i) IPV4 Packet Header format ii) Internetworking (10 Marks)

### Module-4

- 7 a. Explain the following queuing disciplines with a neat diagram:  
i) FIFO Queuing ii) Fair Queuing (10 Marks)  
b. Explain three way hand shake with the help of a neat diagram. (10 Marks)

OR

- 8 a. How congestion is controlled in TCP? Explain. (10 Marks)  
b. Discuss congestion avoidance mechanisms in TCP. (10 Marks)

### Module-5

- 9 a. Explain symmetric-key and public-key ciphers with a neat diagram. (10 Marks)  
b. Write short notes on :  
i) DNS ii) SNMP (10 Marks)

OR

- 10 a. Explain simple mail transfer protocol with the help of a neat diagram. (10 Marks)  
b. Elaborate the functions of firewall. (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.

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