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**CBCS SCHEME**

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21CS52

# Fifth Semester B.E./B.Tech. Degree Examination, June / July 2026
## Computer Networks

Time: 3 hrs. Max. Marks: 100

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

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.

### Module-1

1 a. Explain categories of Network and differentiate between them. **(10 Marks)**
b. Explain ISO – OSI Reference model in detail. **(10 Marks)**

**OR**

2 a. What are the design issue's of layers? **(05 Marks)**
b. Differentiate between Connection Oriented and Connectionless Service. **(05 Marks)**
c. What are the advantages of Fibre Optic Cable? Explain with a neat sketch. **(10 Marks)**

### Module-2

3 a. Explain the various Framing Techniques of Data link layer. **(10 Marks)**
b. Explain about simplex stop and wait protocol for noisy channel. **(10 Marks)**

**OR**

4 a. Explain Pure ALOHA and Slotted ALOHA channel allocation method in detail. **(10 Marks)**
b. Explain about CRC error detection method with suitable example. **(10 Marks)**

### Module-3

5 a. Define Routing. Explain Distance Vector Routing Algorithm with example. **(10 Marks)**
b. What are the advantages and limitations of flooding? **(05 Marks)**
c. Compare Datagram Network and Virtual Circuit. **(05 Marks)**

**OR**

6 a. Define Congestion. Write about approaches to congestion control. **(10 Marks)**
b. How to achieve QoS using Leaky Bucket Algorithm? **(10 Marks)**

### Module-4

7 a. What are the services provided by Transport layer to the upper layer? **(05 Marks)**
b. What are the Primitives of a Transport layer? **(05 Marks)**
c. Explain the Connection Establishment and connection release in transport layer. **(10 Marks)**

**OR**

8 a. Explain each field in TCP Header with neat diagram. **(10 Marks)**
b. Explain how to regulate the sending rate to obtain desirable bandwidth allocation? **(10 Marks)**

### Module-5

9 a. Explain DNS Resource record and message in detail. **(10 Marks)**
b. Explain FTP with its command and replies. **(10 Marks)**

**OR**

10 a. What are the major components in E-mail System? Explain the role of SMTP for Sending and receiving Messages. **(10 Marks)**
b. Discuss about HTTP request and response mechanisms. **(10 Marks)**

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