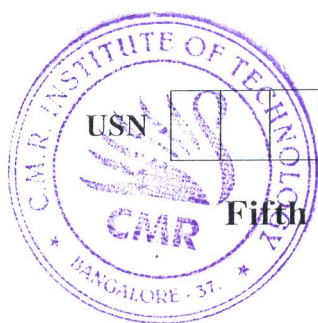


# CBCS SCHEME



USN

--	--	--	--	--	--	--	--	--	--

21CS52

## Fifth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Computer Networks

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- Define Computer Networks. Explain local area network in detail with a neat diagram. (06 Marks)
  - Explain MAN with a neat labelled diagram. (06 Marks)
  - List and explain design issues for layer. (08 Marks)

OR

- What are guided transmission media? Explain twisted pair cable in detail. (06 Marks)
  - Explain TCP/IP reference model with a neat labelled diagram. (10 Marks)
  - Briefly discuss virtual private networks. (04 Marks)

### Module-2

- List and explain any two data link layer design issues. (10 Marks)
  - A bit stream transmitted using standard CRC method. The generator polynomial is  $X^3 + 1$ .
    - What is actual bit string transmitted
    - Suppose 3<sup>rd</sup> bit from the left is inverted during transmission, how will receiver detect this error? (10 Marks)

OR

- Explain Go-Back-N protocol working. (10 Marks)
  - Briefly explain static channel and dynamic channel allocation problem. (10 Marks)

### Module-3

- Write an Dijkstra's algorithm to compute shortest path through graph. Explain with example. (10 Marks)
  - Illustrate working of OSPF and BGP. (10 Marks)

OR

- What is congestion control? List and explain various approaches to congestion control. (12 Marks)
  - What is packet scheduling algorithm? Explain FIFO algorithm. (08 Marks)

### Module-4

- Write a program for congestion control using leaky bucket algorithm. (10 Marks)
  - Briefly explain about transport service primitives. (10 Marks)

OR

- With a neat labelled diagram, explain TCP segment structure. (10 Marks)
  - Explain TCP connection management with TCP connection management FSM diagram. (10 Marks)

**Module-5**

- 9 a. Explain client/server and P-P architecture with a neat labelled diagram. (10 Marks)  
b. Explain use and server interaction with a neat diagram. (10 Marks)

OR

- 10 a. Explain persistent and non persistent http in details. (10 Marks)  
b. Write notes on:  
(i) E-mail in the internet  
(ii) Distributed DNS architecture (10 Marks)

\*\*\*\*\*