



CBCS SCHEME

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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

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

OR

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

Module-2

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

OR

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

Module-3

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

OR

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

Module-4

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

OR

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

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)
