CBCS SCHEME

USN | 1 | ME | 21CS017 | | | | | | | | | 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)**

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

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