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21CS52

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
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. Discuss OSI Reference model with a neat diagram. **(10 Marks)**

   b. Explain Unicast, Multicast and broadcast in computer networks. **(10 Marks)**

OR

2 a. Discuss the following transmission medium with diagram,
   - (i) Co-axial cable.
   - (ii) Fibre optic cable. **(10 Marks)**

   b. Explain the design issues in computer networks. **(10 Marks)**

Module-2

3 a. Explain error detecting codes and obtain the CRC code for the frame given polynomial 1101011111 using the generator $G(x) = x^4 + x + 1$. **(10 Marks)**

   b. Explain framing with Byte Count and Flag bits with bit stuffing. **(10 Marks)**

OR

4 a. Illustrate the Hamming code method with an example. **(10 Marks)**

   b. Explain the following with examples:
   - (i) Binary convolution code.
   - (ii) Reed Solomen code. **(10 Marks)**

Module-3

5 a. Discuss Store and Forward packet switching. **(10 Marks)**

   b. Explain the services provided by Network layer to Transport layer. **(10 Marks)**

OR

6 a. Discuss shortest path algorithm. **(10 Marks)**

   b. Explain the approaches to congestion control in Network layer. **(10 Marks)**

Module-4

7 a. Explain Berkeley Sockets in detail. **(10 Marks)**

   b. Explain socket programming with an example. **(10 Marks)**

OR

8   a. Explain TCP protocol with TCP segment header. (10 Marks)
    b. Explain TCP connection establishment and TCP connection release with code snippet.
    (10 Marks)

Module-5

9   a. Explain the process communication in the Application layer. (10 Marks)
    b. Discuss the Transport services provided by the Internet. (10 Marks)

OR

10 a. Explain the web and HTTP with Request response behaviour. (10 Marks)
    b. Discuss the Electronic Mail in the Internet. (10 Marks)

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