USN ☐☐☐☐☐☐☐☐☐☐

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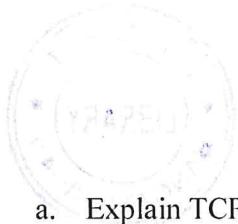　　b.　Explain the services provided by Network layer to Transport layer. **(10 Marks)**

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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