END SEMESTER EXAM 2024

SEMESTER 3 : INTEGRATED M.Sc. PROGRAMME COMPUTER SCIENCE

COURSE : 21UP3CPSTA01 :PROBABILITY AND STATISTICS

Time: 2 hours   **Marks: 100**

Section 1

1. Define Network Performance.

2. Explain two of the Networking Metrics.

3. What is the trade-off between network throughput and delay why they often are contradictory?

4. What are the criteria for measuring Network Reliability?

5. State three common Network Security Issues.

6. What is a Network Link?

7. Differentiate between Point-to-point and Multipoint connection.

8. Give an example of Point-to-point and Multipoint connection.

9. Define Physical Topology.

10. What is the difference between Spatially Shared and Timeshared connections?

11. How are Data, Voice, and Video transmitted over a network?

12. Classify the different types of topologies.

13. On what factors does the performance of a network depend on?

14. Compare Broadcast and point-to-point networks

15. What are the differences between network software and protocol?

Section 2

1. Discuss the different types of transmission media used in a network.

2. Explain the working of a circuit-switched network with neat diagram.

3. Describe in detail various types of network topologies and their applications.

4. What is the role of layers in network architecture? Explain them in detail.

5. Explain the different techniques used for multiplexing in networking.

6. What are the different types of routing algorithms used in networking? Explain the working of any one.

7. What are the components and functions of a network operating system?

8. What are the types of transmission media used in modern networks? Explain Guided Transmission media in detail.

9. Explain the technology of Spread-spectrum, Frequency hopping, & Direct-sequence spreading techniques in detail. Explain the roles of multiplexing available in communication with the frequency domain.

10. What is Data Communication? Describe the different types of data communication networks(DCN). Explain the roles of multiplexing available in communication with the frequency domain.

Section 3

1. Explain the following hybrid network topologies with advantages given below: A) Star-Bus Hybrid B) Tree topology C)Bus-Star hybrid topology D) Hybrid ring topology

2. Explain different single-use wireless technologies in brief. Examples: Infrastructure networks, Repeater, Infrastructure wireless networks, multihop ad hoc, wireless, and sensor Networks

3. Enumerate and explain different switching techniques. A) Circuit Switching B) Message Switching C) Packet Switching D) Datagram Switching

4. Explain how Error control and flow control schemes used in data link layer works with neat diagram.

5. Briefly discuss internet protocols and its working using different layers of OSI models.

6. Explain how error control and flow control in Data communication system can be done with suitable diagrams

7. Define data Communication links, physical Layer, and design issues for network links.