

## Module 1

1. Explain different Network Components in detail.
2. Explain different categories of Network.
3. Name the four basic network topologies, and write an advantage of each type.
4. Which are various categories of network? What are some of the factors that determine whether a communication system is a LAN or WAN?
5. What is connection -oriented connection? How is it different from a connectionless connection?
6. What is the necessity of layering architecture in computer networks?
7. Describe different Addresses (MAC address, IP address, Port address, Specific address) used in networking with examples.
8. Explain the need for layered architecture in communication systems. Also discuss the functions of layers in the OSI reference model.
9. Explain TCP/IP Protocol Suite. Distinguish between OSI model and TCP/IP model.
10. Explain the functions of a) Data Link layer b) Network layer c) Physical layer d)Transport layer

## Module 2

- 1.Explain POP3 and IMAP protocols in detail.
2. Explain Client Server Process in detail.
- 3 Explain Domain Name Space in detail
- 4.Illustrate how TELNET allows users for Remote logging on the Internet.
- 5.In the client server paradigm, explain why a server should be run all the time, but a client can be run whenever it is needed.
6. Draw communication flow diagram of client server process.
- 7.Explain Domain Name System.
8. Explain issues and vulnerabilities related to the application layer.
- 9.Illustrate how electronic mail allows users to exchange messages on the Internet

## Module 3

- 1.Illustrate the scenarios for establishing a connection using a state transition diagram in TCP? (All cases- connection establishment, connection termination and data transfer )
- 2.Illustrate the three protocol scenarios for establishing a connection using a 3-way handshake in TCP?

- 3.Explain UDP header in detail
- 4.Explain TCP header in detail
- 5.Problems based on TCP and UDP header.
- 6.Explain how TCP provides flow control mechanisms in detail.
- 7.Explain how TCP provides error control mechanisms in detail.
- 8.Explain the use of windows in TCP with examples.
- 9.Explain TCP features.
10. Illustrate the three protocol scenarios for establishing a connection using a 3-way handshake in TCP?
- 11.Explain TCP services
- 12.Differentiate between TCP and UDP.
- 13.Explain transport layer services
- 14.Explain Silly window syndrome. And how it can be avoided?
- 15.Explain different congestion detection and congestion avoidance policies in TCP.
- 16.Explain issues and vulnerabilities related to the transport layer.
- 17.Explain TCP timers in detail.
- 18.Explain QoS in the transport layer.