UNIT-I (Physical Layer)

1. Explain OSI reference model with suitable diagram

2. Explain TCP/IP reference model with suitable diagram.

3. Compare TCP/IP with OSI reference model.

4. What is network? Explain the different types of networks in details

5. Explain point-to-point and multi-point connection with suitable diagram.

6. Explain what is network topology and its types with suitable diagrams.

7. Explain data flow/communication flow/transmission modes with suitable diagrams

8. Explain the guided and unguided transmission media in brief with suitable diagram

9. Explain in brief Multiplexing?

10. Explain the different types of switching?

UNIT-II (Data Link Layer)

1. Explain data link layer with different functions.

2. Define framing. With suitable diagram explain byte stuffing and bit stuffing.

3. Explain HDLC protocols with suitable diagram

4. Explain Point-to-Point Protocol with suitable diagram

5. Explain error detection and error correction in Data link layer

6. Explain noiseless channel and how can we ensure flow control in data link layer.

7. Explain the following mechanisms

a. Stop-and-Wait ARQ

b. Sliding Window Protocol

c. Go-Back-N ARQ

d. Selective Repeat ARQ

8. Explain Random Access Protocols: Pure ALOHA and Slotted ALOHA with suitable diagrams

9. Explain in brief with suitable diagram:

a. CSMA

b. CSMA/CD

c. CSMA/CA

10. Explain Collision free protocols/Controlled Access protocols with diagram

11. Explain channelization with different types with help of suitable diagrams

12. Explain different Ethernet technologies

UNIT-3(Network Layer)

1) Explain different functions of network layer.

2) Explain IPv4 and IPv6 with classification in detail

3) Explain CIDR with brief explanation

4) Explain tunnelling with suitable diagram.

5) With neat diagram explain IPv4 Header format.

6) Explain IP packet fragmentation in brief.

7) Explain the following protocols

a) ARP,RARP

b) ICMP and IGMP

8) Explain distance vector routing in brief with example diagram.

9) Explain Link state routing in brief with example diagram.

10) Explain RIP protocol with its working.

11) Explain the following protocols:

a) OSPF b) BGP

12) Explain Hierarchical routing with suitable example.

UNIT-4(Transport Layer)

1) Explain different functions of transport layer.

2) Explain addressing methods at transport layer.

3) Explain UDP protocol along with header format.

4) Explain TCP protocol with services.

5) Explain TCP segment format with suitable diagram.

6) Explain TCP connections: Establishment, Data transfer, Release.

7) Explain error control in TCP.

8) Explain congestion control in TCP.

9) Explain data traffic in TCP

10)Explain 3- way handshaking in TCP with suitable diagram

UNIT-5 (Application Layer)

1) Explain different services of application layer.

2) Explain DNS with suitable architecture.

3) Explain DNS working with suitable diagram.

4) What is DHCP. Explain working of DHCP with suitable diagram.

5) What is Electronic mail. Explain general architecture of an Email system.

6) Explain File Transfer Protocol in detail.

7) Explain in brief WWW and HTTP.

8) Explain SNMP protocol with suitable diagram.