**Unit – 1**

1. Explain in detail about different types of switched network.
2. Discuss in detail on cyclic redundancy check (error detection).
3. Explain different approaches of framing and encoding in detail.
4. Explain in detail about Transparent and source routing bridges.
5. Discuss about the architecture of computer network with neat sketches (ISO/OSI).
6. Perform a comparative study between ISO/OSI model and TCP/IP reference model.
7. Explain various encoding schemes in detail
8. Explain IEEE 802.3 in detail
9. Explain IEEE 802.4,IEEE 802.5 in detail
10. Explain IEEE 802.11 in detail(wireless LAN)
11. Explain in detail about Bluetooth
12. Explain HDLC,PPP,LCP&NCP IN detail
13. Explain network topologies & give the advantages and disadvantages of each type
14. Explain the various factors contributing to the network performance

**Unit – 2**

1. Explain classless inter domain routing (CIDR)
2. Explain in detail about DHCP
3. Draw and explain IP datagram format and compare the fields in the main headers of IPV4 and IPV6
4. Explain in detail about flooding, distance vector and link state routing algorithms
5. Explain in detail about ICMP(Internet control message protocol)
6. Explain IPV4 addressing with fragmentation and subnetting concept(classful addressing)
7. Find the CIDR notation for each address
   1. 11000001 10000011 00011011 11111111
      1. Ans: 193.131.29.255/24
   2. 14.23.120.8
      1. Ans:14.23.120.8/8
8. Explain in detail about ARP and RARP

**Unit – 3**

1. Explain in detail about DES Algorithm
2. Explain in detail about key distribution(distribution of public key & distribution of secret key using public key)
3. Explain in detail about diffe hellman key exchange algorithm(with example problem)
4. Explain in detail about RSA Algorithm(with example problem)
5. Explain in detail about authentication procedure and authentication protocols
6. Explain in detail about pretty good privacy(PGP)
7. Explain in detail about IP security
8. Explain in detail about firewalls
9. Explain in detail about symmetric key cryptography(private key or conventional encryption)
10. Explain in detail about asymmetric key cryptography(public key encryption)
11. Explain in detail about JPEG, MPEG and MP3 compression.

**Unit-4**

1. Explain in detail about UDP and TCP with its header format and connection management
2. Explain in detail about TCP congestion control
3. Explain in detail about TCP flow control
4. Explain in detail about various approaches to congestion control(end-end & network assisted )
5. Explain in detail about principles of congestion control

**Unit-5**

1. Explain in detail about SNMP with relevant diagram
2. Explain in detail about FTP
3. Explain in detail about email(SMTP and mail access protocols)
4. Explain in detail about DNS
5. Explain in detail about multimedia application
6. Explain in detail about world wide web(HTTP)
7. Explain in detail about web services

**Note:**

For unit 4&5 follow class notes and book

**Book**:

Computer networking-a top down approach featuring the internet-3rd edition

**Authors**: James F.Kurose, Keith W.Ross.