

DATA COMMUNICATION AND COMPUTER NETWORKS

Unit-I

1. **What** is data Communication? List out features of data communication?
2. Define Logical Address, Physical Address and Port Address?
3. Define networking, List out the characteristics of networks
4. Write short notes on different types of networks
5. What is protocol, write brief about its importance and its benefits?
6. Illustrate various protocols and standards in networks?
7. Briefly explain layered tasks in network model?
8. Differentiate between analog signals and digital signals?
9. Write short notes on multiplexing and cable modems?

Part-B

1. Describe the characteristics of layered architecture?
2. Describe about types of transmission media with their merits and demerits?
3. Explain the working principle of optical fiber transmission media ?
4. Discuss in detail about wireless LANs?
5. Discuss the network topologies in detail?
6. Explain in detail internet model merits and demerits in detail?
7. Discuss how cabling and sampling works in digital transmission?
8. Discuss about circuit switching and telephone network?
9. Discuss in detail about DSL and SONET

Unit-II

1. write brief notes on ATM(Asynchronous transmission mode)?
2. What is virtual LANs, list out its applications?
3. List any four kinds of errors which remain undetectable by the check sum?
4. Identify the basic functionalities in data link layer?
5. Write brief note on Data link protocol?
6. What is the role of traditional LANs in data link layer?
7. Compare Ethernet and Fast Ethernet?
8. Identify various connecting devices and its importance?
9. Differentiate virtual LANs and Wireless LANs?

10. Write short notes on frame relay?

Part-B

1. What are the different types of error correction methods explain with suitable example?
2. Discuss in detail about satellite networks?
3. Explain stop and wait protocol implementation in detail?
4. Explain different types of wireless technologies (2G,3G,4G) and its importance?
5. Discuss In detail how connecting LANs, specify its importance with suitable examples?

Unit-III

1. Define Unicast routing and multicast routing?
2. Compare IPV4 and IPV6?
3. Write short on protocol parameters?
4. Write the net id, host id and Subnet id of the IP Address 117.34.3.8 and 207.3.54.12?
5. Explain the role of addressing in network layer?
6. List out some basic routing algorithms in network layer?
7. Write short notes on ICMP?
8. Differentiate between internet and intranet?
9. What is the role of packets transmission in network layer?

Part-B

1. Discuss transmission from IPV4 to IPV6
2. Explain in detail on services expected from network layer?
3. Describe in detail the operations of OSPF protocol by considering a suitable network?
4. What is the purpose of subnetting? Explain the various types of subnet mask?
5. Illustrate a brief notes about the BGP routing protocol?
6. What is Count to Infinity problem? Explain in detail about routing algorithm with example?

Unit-IV

1. Identify the basic functionalities of transport layer?
2. Compare flow control and Error Control?
3. what is the minimum size of process data that can be encapsulated to UDP datagram?
4. Give brief notes on process to process delivery?
5. List Well known ports for UDP?
6. Identify the basic UDP Operations?
7. Differentiate between TCP and UDP?
8. What is data traffic?
9. List out TCP and UDP services?
10. Write a brief notes on key management ,Kerberos and Digital signature?

Part-B

1. Explain Congestion control in datagram subnets in detail?
2. explain about websecurity in detail?
3. Explain any one of the symmetric key ciphers in brief?
4. Explain how the packets are transmitted by using TCP approach, explain in detail with neat sketch?
5. What is Cryptography? Explain Public and private keys to be used for cryptography mechanism?
6. Explain the message authentication operation using RSA Algorithm?
7. What is Quality of Service? Explain in detail QOS and techniques to integrate QOS?

Unit-V

1. List out the services of Application layer?
2. Identify design issues of application layer?
3. What is meant by Tunnelling? Explain
4. What is FTP? Explain in brief?

5.What do you mean by RRsets in secure DNS?

Part-B

1.What is DNS?What is the purpose of it? Describe DNS in the internet?

2. Explain about WWW architecture in detail?

3. Explain brief about SMTP and HTTP with suitable examples?

4. Discuss in detail about client server model?

5. Discuss in detail about Socket Interface?

6. Discuss how E-Mail works and importance?