Question Bank

Computer Networks-BTCS-504-18

Unit 1: Data Communication

2 Marks Questions:

1. Define data communication.

2. Name the components of a data communication system.

3. What is the difference between analog and digital data?

4. List any four types of network topologies.

5. Define protocol and standard in data communication.

6. What is a LAN?

7. Define Virtual LAN (VLAN).

8. What is meant by data flow direction?

9. Name any two transmission media.

10. What is a peer-to-peer network?

5 Marks Questions:

1. Explain the components of a data communication system.

2. Compare different types of network topologies.

3. Describe the OSI model with its layers.

4. Differentiate between wired and wireless LAN.

5. Explain the concept of Virtual LAN with an example.

6. Write a short note on protocols and standards.

7. Explain simplex, half duplex, and full duplex data flow.

8. Discuss guided and unguided transmission media.

9. Compare mesh, star, and bus topology.

10. Describe the techniques used for bandwidth utilization.

10 Marks Questions:

1. Explain the OSI model in detail with a neat diagram.

2. Describe various types of network topologies with advantages and disadvantages.

3. Compare different transmission media with respect to bandwidth, noise, and cost.

4. Describe a data communication system and explain how data flows in a network.

5. Elaborate on the techniques for bandwidth utilization: Multiplexing and Switching.

Unit 2: Data Link Layer and Medium Access Sub Layer

2 Marks Questions:

1. What is framing?

2. Define CRC.

3. What is the purpose of hamming code?

4. What is a data link protocol?

5. Define ARQ.

6. What is stop-and-wait ARQ?

7. Write any two functions of the data link layer.

8. What is the purpose of PPP?

9. Name any two types of sliding window protocols.

10. What is HDLC?

5 Marks Questions:

1. Explain design issues of data link layer.

2. Discuss error detection using checksum and CRC.

3. Write short notes on noiseless channels and noisy channels.

4. Explain the working of stop-and-wait ARQ.

5. Describe Go-back-N ARQ protocol.

6. Compare Go-back-N ARQ and Selective Repeat ARQ.

7. Explain the concept of framing and its types.

8. Write a short note on hamming code with an example.

9. Describe HDLC frame format.

10. Compare HDLC and PPP protocols.

10 Marks Questions:

1. Explain error detection and correction techniques in detail.

2. Describe all three ARQ protocols with timing diagrams.

3. Discuss framing methods and their importance in data transmission.

4. Explain the working of HDLC protocol in detail.

5. Compare the various data link protocols used in different channel conditions.

Unit 3: Network Layer Switching

2 Marks Questions:

1. Define logical addressing.

2. Differentiate between IPv4 and IPv6.

3. What is ARP?

4. What is DHCP used for?

5. What is address mapping?

6. What do you mean by delivery and forwarding?

7. Expand RARP and BOOTP.

8. Define unicast routing.

9. Mention two types of switching techniques.

10. What is the function of the network layer?

5 Marks Questions:

1. Compare IPv4 and IPv6 in detail.

2. Explain address mapping protocols: ARP and RARP.

3. What is BOOTP? How is it different from DHCP?

4. Describe delivery and forwarding in the network layer.

5. Write a short note on routing protocols.

6. Differentiate between static and dynamic routing.

7. Explain IP addressing with an example.

8. Describe the working of DHCP.

9. What are the features of IPv6?

10. Write a note on packet switching.

10 Marks Questions:

1. Explain IPv4 addressing in detail with classes and examples.

2. Discuss the working of ARP, RARP, BOOTP, and DHCP.

3. Explain delivery and forwarding mechanisms in the network layer.

4. Describe unicast routing protocols with diagrams.

5. Explain different types of switching techniques with examples.

Unit 4: Transport Layer Process to Process Communication

2 Marks Questions:

1. What is the transport layer?

2. Define UDP.

3. What is SCTP?

4. What is congestion control?

5. Define Quality of Service (QoS).

6. Write the full form of TCP.

7. What is the difference between TCP and UDP?

8. What is a port number?

9. Define Token Bucket algorithm.

10. Define Leaky Bucket algorithm.

5 Marks Questions:

1. Explain the features of UDP.

2. Describe TCP and its functions.

3. Compare UDP and TCP.

4. Explain SCTP with its advantages.

5. Write a note on congestion control mechanisms.

6. Describe Leaky Bucket algorithm with an example.

7. Explain Token Bucket algorithm.

8. What is QoS? List the QoS improvement techniques.

9. Differentiate between flow control and congestion control.

10. Describe process-to-process communication with an example.

10 Marks Questions:

1. Explain TCP in detail, including connection establishment and termination.

2. Compare TCP, UDP, and SCTP protocols.

3. Explain congestion control and describe both Leaky and Token Bucket algorithms.

4. Describe the process-to-process communication in the transport layer.

5. Discuss various QoS parameters and improvement techniques.

Unit 5: Application Layer

2 Marks Questions:

1. What is DNS?

2. Define FTP.

3. What is HTTP?

4. What is SNMP?

5. What is a firewall?

6. Define DDNS.

7. What is TELNET used for?

8. What is an email protocol?

9. Mention one function of the application layer.

10. What is the difference between HTTP and HTTPS?

5 Marks Questions:

1. Explain the working of DNS and DDNS.

2. Describe the basic operation of TELNET.

3. Explain how FTP is used for file transfer.

4. Write a short note on SNMP.

5. Describe the functions of a firewall.

6. Compare TELNET and SSH.

7. Explain the role of HTTP in web communication.

8. What are the different types of email protocols?

9. Describe the architecture of the World Wide Web.

10. Write short notes on Bluetooth communication.

10 Marks Questions:

1. Explain in detail the working of DNS, DDNS, and their importance.

2. Describe email architecture and protocols used (SMTP, POP3, IMAP).

3. Explain HTTP and FTP protocols with message formats and working.

4. Discuss the architecture and working of SNMP.

5. Write a detailed note on firewalls – types, uses, and working.