CN Importnat Question

Introduction

1. Explain the OSI Reference Model with a neat diagram.
2. Compare OSI and TCP/IP models.
3. What are the issues in protocol implementation?

Datalink Layer

1. Explain error detection and correction techniques.
2. Describe the sliding window protocol with an example.
3. What is medium access control? Explain Ethernet and Token Ring.
4. Discuss the issues with wireless LANs.

Network Layer

1. Explain different routing algorithms with examples.
2. What is congestion control? Explain algorithms used at the network layer.
3. Describe Internet Protocol (IP) addressing and packet format.
4. Differentiate between unicast, multicast, and inter-domain routing.
5. What are the design issues of the network layer?

Transport Layer

1. Explain the elements of the transport protocol.
2. Discuss congestion control mechanisms at the transport layer.
3. Explain Transmission Control Protocol (TCP) features and working.
4. What is Remote Procedure Call (RPC)? Explain with implementation semantics.
5. Describe the role of sockets in client-server applications.

Application Layer

1. Explain the working of Domain Name System (DNS).

2. Write short notes on SMTP, FTP, and HTTP.
3. Explain the architecture of the World Wide Web.
4. How is presentation formatting and data compression achieved?
5. Write a note on Web Services architecture for developing new application protocols.
6. Introduction to Network Security – explain threats and basic mechanisms.

Computer Network

Introduction

- Network architecture
- Protocol implementation issues
- Network design
- Reference models
- The OSI Reference Model
- The TCP/IP Model
- A Comparison of the OSI and TCP/IP Models

Datalink Layer

- Ethernet
- Token ring
- Wireless LANs
- Issues with data link protocols
- Encoding framing and error detection and correction
- Sliding window protocol
- Medium access control

Network Layer

- Network layer design issues
- Routing algorithms
- Congestion control algorithms
- Internetworking
- The network layer in the Internet
- Internet Protocol (IP)
- Unicast, multicast, and inter-domain routing

Transport Layer

- Elements of transport protocol
- Congestion control
- The Internet’s Transmission Control Protocol (TCP)
- Remote Procedure Call (RPC)
- Implementation semantics of RPC
- BSD
- Sockets
- Client-server applications

Application Layer

- Domain Name Server (DNS)
- Simple Mail Transfer Protocol (SMTP)
- File Transfer Protocol (FTP)
- World Wide Web (WWW)
- Hypertext Transfer Protocol (HTTP)
- Presentation formatting and data compression
- Introduction to Network Security
- Web Services architectures for developing new application protocols