

ST ANN'S COLLEGE OF ENGINEERING & TECHNOLOGY: CHIRALA
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
FREQUENTLY ASKED QUESTIONS

Subject: Computer Networks (CN).

Year: III B.Tech – II Sem B&C.

Faculty: A.V.S.SUDHAKAR RAO

UNIT – 1

1. a) Explain in detail about the Novell Network.
b) Discuss how Internet has revolutionized many aspects of our daily lives
2. Explain different Layers and their functionalities in TCP/IP Model.
3. a) Compare OSI Reference Model with the TCP/IP Model.
b) Differentiate LAN, MAN and WAN.
4. What are the different Layers in the OSI Reference Model? Explain the Functionalities of each Layer.
5. a) What is the difference between half-duplex and full-duplex transmission modes?
b) How the Internet has evolved over the years?
6. Why are protocols needed? Name the four basic network topologies, and discuss the advantages and drawbacks of each of them.
7. a) Explain the TCP/IP protocol suit in detail.
b) Explain in detail about ARPANET.
8. What is Addressing? Explain different types address and distinguish between physical address and logical address.
9. What is network architecture? What is layered architecture? Explain design issues for the layers?
10. a) Write short notes on NSFNET.
b) Discuss the “Bad Timing” problem of OSI reference model.

UNIT – 2

1. a) Explain in detail about the statistical time division multiplexing
b) Compare and contrast a circuit-switched network and a packet-switched network
2. a) Explain briefly about the applications of FDM
b) Explain in detail about the synchronous time division multiplexing.
3. What is Frequency Division Multiplexing? Explain Multiplexing process in Frequency Division Multiplexing with a suitable example.
4. a) What are the two phases required in the Setup phase in Virtual Circuit? Explain.
b) Explain in detail about the Efficiency and Delay in Datagram Networks.
5. Explain the basic format of multiplexed system. Why is multiplexing more cost effective? Explain in detail about the Wavelength Division Multiplexing.
6. a) Compare synchronous time division multiplexing with statistical time division multiplexing.
b) Differentiate between virtual circuit and circuit switching?
7. a) What is the role of a physical layer? How the cables and their interface are used for Communication?
b) Define data gram. How switching takes place in datagram networks?
8. a) Compare the wavelength division multiplexing with the frequency division multiplexing.
b) Four data channels (digital), each transmitting at 1 Mbps, use a satellite channel of 1MHz. Design an approximate configuration, using FDM.
9. Discuss briefly about virtual circuit networks.
10. Explain different types of switching techniques along with their advantages and disadvantages.

UNIT – 3

1. a) What are the services provided to the Network Layer by Data Link Layer? Explain.
b) Differentiate Connection oriented service(COS) and Connection less service(CLS).
2. a) Given 1101011011 data frame and generator polynomial $G(x) = x^4 + x + 1$. Derive the transmitted frame.
b) Explain in detail about the Simplex protocol for Noisy channel.
3. a) Explain in detail about the sliding window protocol using Selective Repeat.
b) Give a brief note on the Multilink Point to point protocol.
4. a) Explain briefly about one-bit sliding window protocol.
b) Explain in detail about the point-to-point protocol frame format.
5. a) What is the problem in Go-Back-N protocol? How it can be solved.
b) Explain briefly about one bit sliding window protocol.
6. a) Explain about the design issues of data link layer?
b) Draw a CRC encoder and decoder for CRC code with C (7, 4). Also explain how this CRC design works, with an example.
7. (a) What is the need for Framing? What are the different framing techniques?
(b) Explain the working of Simplex protocol for Noisy channel and unrestricted simplex protocol.
8. (a) Discuss the concept of redundancy in error detection and correction.
(b) What is the hamming distance? Discuss what kind of error is undetectable by the checksum.
9. a) Distinguish between fixed size framing and variable size framing.
b) What is error correction? Explain how Hamming code performs error correction using suitable example.
10. What is HDLC? For what purpose it is used? Explain its frame formats.
10. a) What is sliding window? How the sliding window of sender and receiver change as the transmission takes place?
b) Explain about the significance of window size in selective repeat and go-back-n protocol with suitable example.

UNIT – 4

1. a) Describe in detail about the Frequency Division Multiple Access.
b) Explain briefly about the shortest path routing algorithm.
2. a) Explain how slotted aloha improves the performance of pure aloha.
b) Discuss briefly about the token passing.
3. With a suitable example explain Distance Vector Routing algorithm. What is the serious drawback of Distance Vector Routing algorithm? Explain.
4. a) Describe in detail about the Hierarchical routing.
b) What is polling? Explain with suitable example
5. What is CSMA? Bring out the differences between 1-persistent, non-persistent, and p-persistent, CSMA.
6. a) How Reservations can be used to control access to the channel? Explain any one reservation based protocol. What are the advantages and disadvantages of reservation protocols?
b) Compare FDMA and TDMA.
7. a) What is meant by channelization? Explain CDMA
b) Draw the flow diagram for CSMA/CA and explain it.
8. What is CSMA/CD? Discuss how it will function.
9. a) What is the difference between unicasting, multicasting, and broadcasting?
b) Compare Virtual circuit and datagram subnets?
10. Explain about the following
a) Flooding b) Broadcast Routing c) Multicast Routing

UNIT – 5

1. Explain in detail about common Fast Ethernet implementations.
2. a) Compare HDLC Frame with the LLC and MAC frame formats.
b) Explain in detail about the addressing mechanism in 802.11.
3. a) What are the common Standard Ethernet implementations? Explain.
b) Enlighten on the frame structure of IEEE 802.11 frame structure.
5. Discuss the standard Ethernet MAC sub-layer primary responsibilities.
6. a) How IEEE standards contribute to physical and data link layers?
b) Taking a binary string as example, encode it using binary encoding and Manchester Encoding?
7. a) Write the 802.3 MAC frame format and explain it clearly.
b) Discuss how the Fast Ethernet is implemented and discuss about encoding for it.
8. a) Explain the fast Ethernet MAC sub layer.
b) Explain about Manchester encoding with a suitable example.
9. What are the advantages of dividing an Ethernet LAN with a bridge? Give the relationship between a switch and a bridge.

ASSIGNMENT – 6

1. a) Explain in detail about the Client and Server in World Wide Web.
b) Describe briefly about the HTTP Operational Model.
2. a) Explain briefly about the Architecture of WWW.
b) What are the different request types available in HTTP? Explain.
3. a) What is the use of Uniform Resource Locator for the Client? Explain.
b) Give a brief note on Wireless application protocol.
4. a) Give a brief note on the HTTP Transaction.
b) What are the different Status Codes available in HTTP? Explain.
5. a) Discuss the protocol stack of WAP.
b) Explain HTTP Transaction with an example.
6. a) What is WEB Documents? Explain with its categories?
b) Explain about HTTP Request Message Format ?
7. a) Explain about proxy server in detail?
b) Explain about static document & dynamic document?
8. a) What is a URL and explain about its components.
b) Explain about HTML with its functionalities.
9. a) Explain about HTTP Response Message Format?
b) Describe why HTTP is designed as a stateless protocol.