MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu.

Estd. 2000

Department of Computer Science and Engineering
Question Bank - Academic Year (2020-21)

Course Code & Course Name : 19CSC07 & Computer Networks

Name of the Faculty : S.R.Sridhar

Year/Sem/Sec : II / IV / B

Unit-I: Introduction
Part-A (2 Marks)

1. Define the term Computer Network.
2. State Data Communication.
3. Define Protocol and Standards.
4. A network with bandwidth of 10 Mbps can pass only an average of 12, 000 frames per minute where each frame carries an average of 10, 000 bits. What will be the throughput for this network?
5. Give the components of data communication.
6. Differentiate port address, logical address and physical address?
7. What are the advantages of distributed processing?
8. List out the Transmission modes in Networks.
9. Name the factors that affect the performance of a network.
10. Give an advantage for each type of network topology.

Part-B (16 Marks)

1. Describe the functions of the layers in the OSI reference model. (16)
2. Express the features of the various unguided media. (16)
3. Explain the features of various guided media. (16)
4. Explain the various topologies. (16)
5. Describe the categories of network. (16)

Unit-II : Data Link Layer
Part-A (2 Marks)

1. Write the design issues of datalink layer?
2. What is the main function of datalink layer?
3. Define bit stuffing.
4. What is flow control?

5. How is error controlled in datalink controlled protocol?
6. Discuss the concept of redundancy in error detection.
7. Observe CSMA?
8. Read CSMA/CD. List its types.
9. Examine collision detection?
10. List any four IEEE 802 standards with its name.

Part-B (16 Marks)

1. (a) The message 11001001 is to be transmitted using CRC error detection algorithm. Assuming the CRC polynomial to be x 3 + 1, determine the message that should be transmitted. If the second left most bit is corrupted, show that it is detected by the receiver. (16)
   (b) Explain selective repeat and go back –N.
2. Explain the datalink layer protocol HDLC. (16)
3. Complete the CSMA/CD algorithms of Ethernet. (16)
4. Prepare the access method and frame format used in Ethernet and token ring. (16)
5. (i) A block of 32 bits has to be transmitted. Discuss how the thirty two bit block is transmitted to the receiver using Longitudinal Redundancy Check. (16)
   (ii) Consider a 32 bit block of data 11100111 11011101 00111001 10101001 that has to be transmitted. IF Longitudinal Redundancy Check is used what is the transmitted bit stream.
   (iii)In the Hamming code for a data unit of m bits how do you compute the number of redundant bits 'r' needed.
   (iv)What kinds of errors can vertical Redundancy check determine? What kinds of errors it cannot determine?
6. List the various error detection methods available to detect the errors and Explain with example. (16)

Unit-III : Network Layer

Part-A (2 Marks)

1. Discover internetworks?
2. Define packet switching?
3. Enumerate Internet Protocol (IP)?
4. Difference between ARP and RARP.
5. Discuss the class field in IP address.
6. Memorize Multicasting.
7. Define the term broad casting.
8. State hostid and netid?
9. What is the purpose of subnetting?
10. Difference between IPv4 and IPv6.

Part-B (16 Marks)

1.	Apply the network layer in the Internet and IP addressing.	(16)
2.	Distinguish IPV4 with neat diagram.	(16)
3.(i)	Explain CIDR and subnetting in detail. (8)	(8)
3. (ii)	Discuss DHCP	(8)
4.	Write short note about ARP & RARP Protocol	(16)
5.	Short note about IPV6 in detail	(16)

Unit-IV : Routing and Transport Layer

Part-A (2 Marks)

1. List out the Routing protocols .
2. Classify the services provided by transport layer protocol?
3. List some of the Quality of service parameters of transport layer
4. Label the functions of transport layers?
5. Compare RIP and OSPF.
6. Define Congestion.
7. Compare flow control versus congestion control.
8. How transport layer performs Duplication control?
9. Difference between TCP and UDP.
10. Define BGP.

Part-B (16 Marks)

1.	Explain the congestion control algorithm used to improve the QoS of the Computer network.	(16)
2.	With an example network scenario explain the mechanism of Routing Information Protocol and Specify the routing table contents.	(16)
3.	Elaborate on TCP congestion control mechanisms.	(16)
4.	Explain BGP.	(16)
5.	Manipulate the three-way handshake protocol to establish the transport level connection.	(16)

Unit-V : Application Layer and Security

Part-A (2 Marks)

1. Define WWW.
2. Discuss the three main divisions of the DNS.
3. Describe why HTTP is designed as a stateless protocol?
4. What are the transmission modes of FTP?
5. Compare the HTTP and FTP

6. What is DNS?
7. Define Cryptography.
8. List out the categories of cryptographic algorithms.
9. Define Firewall.
10. What are the Authentication protocols in Cryptography?

Part-B (16 Marks)

1.		Construct DNS with reference to its components and working.	(16)
2.	(i)	Demonstrate the message transfer using simple mail transfer protocol.	(8)
2.	(ii)	Write a short note about application layer security.	(8)
3.		Write short notes on email services of the application layer.	(16)
4.		Explain the various cryptographic algorithms in detail.	(16)
5.	(i)	Discuss DNS.	(8)
5.	(ii)	Explain Firewall.	(8)

Course Faculty **HoD**