



Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 70793

M.C.A. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019
Third Semester
MC 5302 – COMPUTER NETWORKS
(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. List some of the factors that determine whether a communication system is a LAN or WAN ?
2. What are the three criteria necessary for an effective and efficient network ?
3. Distinguish between forward error correction and error correction by retransmission.
4. What are the common standard of Ethernet implementation ?
5. What is the number of bits in an IPV6 address and which type of service is provided ?
6. Why there is no need for the ICMPV4 message to travel outside its own network ?
7. What is the maximum and minimum size of UDP datagram ?
8. Distinguish between open loop and closed loop. Name the policies that can prevent congestion ?
9. What are the two main categories of DNS messages ?
10. How is HTTP similar to FTP ?

PART – B

(5×13=65 Marks)

11. a) Categorize the various communication networks ? Explain the communication model in detail with neat block diagram. (13)
(OR)
b) With architecture explain the TCP/IP protocol in detail. (13)

70793



12. a) With an example explain the concept of error detection and correction mechanism. (13)

(OR)

- b) Briefly discuss about Ethernet, token ring and Bluetooth with necessary illustrations. (13)

13. a) i) Consider an IP packet with a length of 4500 bytes that includes a 20 byte IPV4 header and 40 byte TCP header. The packet is forwarded to an IPV4 router that supports a Maximum Transfer Unit (MTU) of 600 bytes. Assume that the length of the IP header in all the outgoing fragments of this packet is 20 bytes. Compute the fragment offset value stored in the third fragment. (10)

- ii) Distinguish between circuit switching and packet switching. (3)

(OR)

- b) With a suitable network scenario of minimum 5 routers explain the logic of distance vector routing and link state routing algorithms. (13)

14. a) Elucidate in detail the concept of transmission using RTP and User Datagram Protocol. (13)

(OR)

- b) Explain the concept of connection establishment. Briefly explain the any one flow control mechanism involved in transport layer. (13)

15. a) In asymmetric key cryptography, how do you think two persons can establish two pairs of keys between themselves. Also, elaborate the concept of RSA algorithm? (13)

(OR)

- b) How is HTTP related to WWW? Give an overview of the architecture, client, server and cookies of WWW. (13)

PART - C

(1×15=15 Marks)

16. a) i) Enumerate the functions of the various layers of OSI models with neat diagram. (10)

- ii) Do port addresses need to be unique? Why or why not? Why are port addresses shorter than IP addresses? (5)

(OR)

- b) Consider the network topology of an institution and explore the various protocols involved in each layer while accessing a web page from a remote server. Assume that the client browser is accessing internet for first time. (15)