Second Semester MCA (Two Years) Degree (R, S) Examination May 2024

Course Code: 20MCA104

Course Name: ADVANCED COMPUTER NETWORKS

Max. Marks: 60   Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

Marks

1	With figures, explain the basic topologies used in computer networks.	(3)
2	Calculate the propagation time and transmission time for a 5Mbytes message if the bandwidth of the network is 1Mbps. Assume that distance between the sender and receiver is 12000km and light travels at 2.4×10^8 m/s.	(3)
3	Compare Frequency Division Multiplexing with Time Division Multiplexing	(3)
4	With figure explain how Go-Back N ARQ works.	(3)
5	Differentiate between virtual circuit and datagram approach used in packet switching.	(3)
6	Explain distance vector routing used in packet routing.	(3)
7	Write short note on Ethernet along with its frame format.	(3)
8	Explain how token passing mechanism works in IEEE 802.5 standard.	(3)
9	Explain how Simple Network Management Protocol manages devices in a network with figure.	(3)
10	Why gateways are used in computer networks? list its features.	(3)

PART B

Answer any one question from each module. Each question carries 6 marks.

Module I

11	With figure explain the responsibilities of various OSI protocol layers.	(6)

OR

12	Write short notes on the following protocols used in computer network	(6)
	a) ARP b) ICMP c) POP3 d) SMTP	

Module II

13   Elucidate TCP header structure and major transport layer services.   (6)

OR

14   Explain congestion control. What are the factors which causes it? Explain each   (6)
     categories of congestion control in detail.

Module III

15   a) Express how address depletion faced by classful addressing is overcome   (4)
        by classless addressing.

     b) A block of address is granted to a small organization. One of the address is
        205.16.37.39/28. Find the starting and ending address given to organization   (2)

OR

16   With suitable diagram explain IPv4 datagram packet format.   (6)

Module IV

17   a) Explain briefly on error detection code technique checksum used in data   (3)
        communication.

     b) For this given data 11001100 10101010 11110000 11000011, perform
        check sum operation at sender site and receiver site and verify the data at   (3)
        receiver site.

OR

18   Explain Carrier Sense Multiple Access with collision detection algorithm in detail.   (6)

Module V

19   Explain Bluetooth technology with its architecture.   (6)

OR

20   Explain various functions and protocols used by network management system.   (6)

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