U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

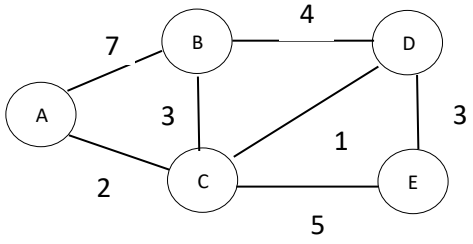
January / February 2025 Semester End Main Examinations

Programme: B.E. **Semester: V**
Branch: Electronics and Telecommunication Engineering **Duration: 3 hrs.**
Course Code: 22ET5PCCCN **Max Marks: 100**
Course: Computer Communication Networks

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

			UNIT - I	*CO*	*PO*	Marks
1	a)		What are the four levels of addresses used in a TCP/IP protocol suite? Explain with examples.	*CO2*	*PO1*	**10**
	b)		Describe the circuit switched network and discuss the different phases of communication in circuit switched networks.	*CO2*	*PO1*	**10**
			OR			
2	a)		With diagram explain mesh topologies	*CO1*		**06**
	b)		With diagram explain functions of datalink layer	*CO1*		**06**
	c)		With diagram explain TCP/IP protocol suite	*CO1*		**08**
			UNIT - II			
3	a)		Explain the selective repeat ARQ protocol for a noisy channel considering the design and algorithm.	*CO2*	*PO1*	**08**
	b)		Explain why collision is an issue in a random access protocol but not in controlled access? List the controlled access protocols and explain with an example.	*CO2*	*PO1*	**08**
	c)		A network using CSMA/CD has a bandwidth of 10 Mbps. If the maximum propagation time (including the delays in the devices and ignoring the time needed to send a jamming signal) is 25.6μS, what is the minimum size of the frame	*CO2*	*PO1*	**04**
			OR			
4	a)		Describe the frame format and frame length of IEEE 802.3 MAC sub layer.	*CO2*	*PO1*	**10**
	b)		Briefly describe the addressing mechanism of IEEE 802.11 standard	*CO2*	*PO1*	**10**
			UNIT - III			
5	a)		An ISP is granted a block of addresses starting with 190.100.0.0/16 (65,536 addresses). The ISP	*CO3*	*PO2*	**08**

			needs to distribute these addresses to three groups of customers as follows: a. The first group has 64 customers; each needs 256 addresses. b. The second group has 128 customers; each needs 128 addresses. c. The third group has 128 customers; each needs 64 addresses. Design the sub blocks and find out how many addresses are still available after these allocations			
	b)		Change the following IPv4 addresses from binary notation to dotted-decimal notation. i. 10000001 00001011 00001011 11101111 ii. 11000001 10000011 00011011 11111111	*CO3*	*PO2*	**04**
	c)		Describe the different types of addresses used in IPV6 with an example	*CO2*	*PO1*	**08**
			OR			
6	a)		Suppose an organization is given the block 17.12.40.0/26, which contains 64 addresses. The organization has three offices and needs to divide the addresses into three sub blocks of 32, 16, and 16 addresses. Find the new masks in each cases and the subnetted address.	*CO3*	*PO2*	**10**
	b)		Change the following IPv4 addresses from dotted-decimal notation to binary notation. i. 111.56.45.78 ii. 221.34.7.82	*CO3*	*PO2*	**04**
	c)		Compare between IPV4 and IPV6 packet headers.	*CO2*	*PO1*	**06**
			UNIT - IV			
7	a)		Compare between a TCP segment and an SCTP packet.	*CO2*	*PO1*	**08**
	b)		Describe the initialization and sharing of the distance vector routing protocol	*CO2*	*PO1*	**08**
	c)		Briefly describe the link state routing protocol	*CO2*	*PO1*	**04**
			OR			
8	a)		With an example explain two-node loop instability	*CO2*	*PO1*	**06**
	b)		With an example explain path vector routing	*CO2*	*PO1*	**07**
	c)		Using Dijkstra algorithm obtain the shortest path, consider root node as A  	*CO2*	*PO1*	**07**
			UNIT - V			
9	a)		Describe the different categories of congestion control.	*CO2*	*PO1*	**08**
	b)		Describe the flow characteristics of QOS.	*CO2*	*PO1*	**06**

		c)	How do we create, store and use the cookies in World Wide Web.	*CO2*	*PO1*	**06**
			OR			
	10	a)	With diagram explain generic and inverse domain	*CO1*		**07**
		b)	With diagram explain network virtual terminal	*CO1*		**06**
		c)	With diagram explain file transfer protocol	*CO1*		**07**

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