CBCS SCHEME

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BCS502

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Computer Networks

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	What is data communication? List and explain characteristics and components of communication model.	06	L1	CO1
	b.	Define switching. Explain Circuit Switched Network and Packet Switched Network.	06	L2	CO1
	c.	With neat sketch, explain different layers of TCP/IP protocol suite.	08	L2	CO1
		OR			
Q.2	a.	What are guided transmission media? Explain twisted pair cable in detail.	06	L1	CO1
	b.	What is Virtual Circuit Network (VCN)? With neat diagram, explain three phases involved in VCN.	08	L1	CO1
	c.	Write a note on Encapsulation and decapsulation at Source Host for TCP/IP protocol suite.	06	L2	CO1
		Module – 2			
Q.3	a.	Define Redundancy. Explain CRC encoder and CRC decoder operation with block diagram.	08	L2	CO2
	b.	Distinguish between Flow Control and Error Control. Explain Stop and Wait Protocol.	08	L2	CO2
	c.	List and explain Control Fields of I-frames, S-frames and U-frames.	04	L2	CO2
		OR			
Q.4	a.	What is Hamming distance? With example, explain Parity Check Code.	06	L1	CO2
	b.	Define Framing. Explain character oriented framing and bit-oriented framing.	06	L1	CO2
	c.	With flow diagram, explain CSMA/CA.	08	L2	CO2
		Module – 3			
Q.5	a.	Explain virtual-circuit approach to route the packets in packet-switched network.	10	L2	CO3
	b.	Illustrate the working of OSPF and BGP.	10	L3	CO3
		OR			
Q.6	a.	Explain IPv6 datagram format.	10	L2	CO3
	b.	Write an Dijikstra's algorithm to compute shortest path through graph.	06	L1	CO3
	c.	Write a note on Routing Information Protocol (RIP) algorithm.	04	L2	CO3
		Module – 4			
Q.7	a.	Explain Go-Back-N protocol working.	10	L2	CO4
	b.	With neat sketch, explain three-way handshaking of TCP connection establishment.	10	L2	CO4

		OR			
Q.8	**a.**	With an outline, explain selective repeat protocol.	**10**	**L2**	**CO4**
	b.	List and explain various services provided by User Datagram Protocol (UDP).	**10**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Briefly explain Secure Shell (SSH).	**10**	**L2**	**CO4**
	b.	Write a note on Request message and response message formats of HTTP.	**10**	**L2**	**CO4**
		OR			
Q.10	**a.**	With neat diagram, explain the basic model of FTP.	**04**	**L2**	**CO4**
	b.	Describe the architecture of electronic mail (e-mail).	**06**	**L3**	**CO4**
	c.	Briefly explain Recursive Resolution and Iterative Resolution in DNS.	**10**	**L2**	**CO4**

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