CBCS SCHEME

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BEC/BTE702

Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Computer Networks and Protocols

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.	Explain the various types of physical topologies available in computer networks.	10	L2	CO1
	b.	With a neat diagram, explain the significance of layers in TCP/IP protocol suite.	10	L2	CO2
		OR			
Q.2	a.	Explain LAN and WAN with the help of neat diagrams.	10	L2	CO1
	b.	What is an ARP? Explain the operation of ARP and its packet format with suitable diagrams.	10	L2	CO2
		Module – 2			
Q.3	a.	Explain CSMA and show the behavior of the three persistence methods of CSMA.	10	L2	CO2
	b.	Describe flow control and error control in Data link layer.	5	L2	CO2
	c.	Write a 'C' program to perform Bit stuffing.	5	L2	CO3
		OR			
Q.4	a.	Explain CSMA/CA protocol with a flow diagram.	10	L2	CO2
	b.	Explain the Ethernet frame format of standard Ethernet.	5	L2	CO2
	c.	Write a 'C' program to perform Byte stuffing.	5	L2	CO3
		Module – 3			
Q.5	a.	Explain the working of Dynamic Host Configuration Protocol [DHCP].	10	L2	CO3
	b.	With a neat diagram, explain the virtual circuit packet network and its various phases of operation.	10	L2	CO3
		OR			
Q.6	a.	Explain IPv4 Datagram format, with a neat diagram.	10	L2	CO3
	b.	Explain distance vector routing and write a 'C' program to perform distance vector routing.	10	L2	CO3
		Module – 4			
Q.7	a.	Explain connectionless and connection oriented protocols in transport layer.	10	L2	CO2
	b.	Explain the working of Go-back-N protocol.	10	L2	CO2
		OR			
Q.8	a.	With a neat diagram, explain state transition diagram of TCP.	10	L2	CO2
	b.	Explain UDP services along with neat diagram of Pseudo header for checksum.	10	L2	CO2
		Module – 5			
Q.9	a.	Explain the following with diagram : i) WWW iii) HTTP iii) FTP.	10	L2	CO4
	b.	Explain the architecture of electronic mail with a neat diagram.	10	L2	CO4
		OR			
Q.10	a.	Explain DNS Name space, DNS in the internet and resolution.	10	L2	CO4
	b.	Explain remote logging in TELNET with a neat diagram.	10	L2	CO4

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