USN | | | | | | | | | | | BCS502

Fifth Semester B.E./B.Tech. Degree Examination, June/July 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.	Define Data Communications. Explain the characteristics and components of Data communication with neat diagram.	10	L2	CO1
	b.	With neat diagram explain the Layers in the TCP /IP protocol suite.	10	L2	CO1
		OR			
Q.2	a.	Explain in detail the guided and unguided Media transmission with suitable diagram.	12	L2	CO1
	b.	Describe the working of Datagram network with suitable sketches	08	L2	CO1
		Module – 2			
Q.3	a.	With a neat sketch describe the working of simple protocol of Data Link Layer. Develop a program to implement a sliding window protocol in the data link layer.	12	L2	CO2
	b.	Illustrate the stop and wait protocol of DLL with an example.	08	L2	CO2
		OR			
Q.4	a.	Solve : i) In parity check if the dataword is 1011. What is the code word? What happens at receiver, if the receive word is a) 10011 b) 10110 c)01011 ii) Generate CRC for the dataword $x^3 + 1$ and the generator $x^3 + x + 1$. What happens if the received word is 1000110. iii) Generate checksum of list of five 4-bit number (7,11,12,0,6) and verify the same at receiver.	12	L3	CO2
	b.	Illustrate the working of CSMA/CA with a flow diagram	08	L2	CO2
		Module – 3			
Q.5	a.	Summarize the packet format of IPV6 datagram with suitable diagram.	10	L2	CO2
	b.	Develop an algorithm for Distance Vector Routing and explain the same.	10	L2	CO4
		OR			
Q.6	a.	Explain MOSPF with an example and suitable diagram.	10	L3	CO4
	b.	Develop algorithm for Link state Routing and explain the same.	10	L2	CO4
		Module – 4			
Q.7	a.	Illustrate the working of Go-back-N protocol with an example	12	L2	CO4
	b.	Explain connectionless aand connection oriented services in Transport layer.	08	L2	CO2
		OR			
Q.8	a.	Illustrate the connection establishment and termination in TCP/IP with suitable sketches.	12	L2	CO3
	b.	With sketch of TCP segment format, describe its field.	08	L2	CO3
		Module – 5			
Q.9	a.	Explain FTP and its two connections.	10	L2	CO3
	b.	Explain SMTP with diagram and the mail transfer phases.	10	L2	CO3
		OR			
Q.10	a.	Explain MIME and its header.	10	L2	CO3
	b.	Explain SSH and its components with neat diagram.	10	L2	CO3

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