BCS502

Model Question Paper-1 with effect from 2022-23 (CBCS Scheme)

USN | | | | | | | | | | |

Fifth Semester B.E. Degree Examination

Subject Title:Computer Networks

TIME: 03 Hours **Max. Marks: 100**

Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

		Module -1	*Bloom's Taxonomy Level	COs	Marks
Q.01	a	Describe the operation of connectionless packet-switched network with the help of neat diagram.	L1,L2	1, 2	7
	b	What is meant by logical connection in TCP/IP. Explain TCP/IP reference model with diagram?	L1,L2	1, 2	7
	c	Explain the four basic topologies used in networks. List advantages and disadvantages of each of them.	L1,L2	1, 2	6
		OR			
Q.02	a	What are guided transmission media? Explain twisted pair cable in detail.	L1,L2	1, 2	7
	b	Describe TCP/IP reference model with diagram?	L1,L2	1, 2	7
	c	Compare OSI and TCP/IP Models. What are the reasons for OSI model to fail?	L1,L2	1, 2	6
		Module-2			
Q. 03	a	Solve using Cyclic Redundancy Check. Dataword:1001, Divisor-1011.	L1,L2,L3	2, 3	7
	b	Write the S Frame format of HDLC and explain the individual field of it.	L1,L2,L3	2, 3	7
	c	What is the difference between ALOHA and Slotted ALOHA	L1,L2,L3	2, 3	6
		OR			
Q.04	a	What is bit oriented framing and its frame pattern. Explain with example byte stuffing and unstuffing in bit-oriented framing.	L1,L2,L3	2, 3	7
	b	Explain the flow diagram of CSMA/CD and explain.	L1,L2,L3	2, 3	7
	c	What is PPP? What are the services provided by PPP?	L1,L2,L3	2, 3	6
		Module-3			
Q. 05	a	Explain classful addressing system with a neat diagram.	L1,L2,L3	2, 3	7
	b	Show, how to form the least cost tree using Dijkstra Algorithm with an example.	L1,L2,L3	2, 3	7
	c	An ISP is granted the block 16.12.64.0/20. The ISP needs to allocate addresses for 8 organizations, each with 256 addresses. a. Find the number and range of addresses in the ISP block. b. Find the range of addresses for each organization and the range of unallocated addresses. c. Show the outline of the address distribution and the forwarding table.	L1,L2,L3	2, 3	6
		OR			
Q. 06	a	Write a program for Bellman ford algorithm.	L1,L2,L3	2, 3	7
	b	Explain Open Shortest Path First Protocol with example.	L1,L2,L3	2, 3	7
	c	Explain DHCP and its importance?	L1,L2,L3	2, 3	6
		Module-4			
Q. 07	a	Explain Transport-Layer Services Process-to-Process Communication in detail	L1,L2,L3	3, 4	7

	b	List the services and applications of TCP.	L1,L2,L3	3, 4	7
	c	Explain stop and wait and Selective-Repeat protocol working.	L1,L2,L3	3, 4	6
		OR			
Q. 08	a	Explain connection establishment of TCP using 3-way handshaking.	L1,L2,L3	3, 4	7
	b	Explain TCP Congestion control.	L1,L2,L3	3, 4	7
	c	Explain FSM for Reno TCP	L1,L2,L3	3, 4	6
		Module-5			
Q. 09	a	Explain the services provided by the Transport Layer with different protocols	L1,L2,L3	3, 4	7
	b	Differentiate client server paradigm and peer-to-peer paradigm.	L1,L2,L3	3, 4	7
	c	Differentiate between Persistent and Non-Persistent connection in HTTP.	L1,L2,L3	3, 4	6
		OR			
Q. 10	a	Explain about Web Documents and HTTP	L1,L2,L3	3, 4	7
	b	Explain in detail Iterative Communication Using TCP	L1,L2,L3	3, 4	7
	c	Explain briefly Domain Name System (DNS)	L1,L2,L3	3, 4	6

REVISED BLOOMS TAXONOMY LEARNING LEVEL (RBT)					
L1: Remember	L2: Understand	L3: Apply	L4: Analyze	L5: Evaluate	L6: Create

COURSE OUTCOMES (COs)	
1	**Explain** the fundamentals of computer networks.
2	**Apply** the concepts of computer networks to demonstrate the working of various layers and protocols in communication network.
3	**Analyze** the principles of protocol layering in modern communication systems.
4	**Demonstrate** various Routing protocols and their services using tools such as Cisco packet tracer.

PROGRAM OUTCOMES (POs)					
1	Engineering Knowledge	5	Modern tool usage	9	Individual and Team-Work
2	Problem Analysis	6	Engineer and Society	10	Communication
3	Design / Development Solutions	7	Environment and Sustainability	11	Project Management and Finance
4	Conduct Investigations of Complex problems	8	Ethics	12	Life-long Learning