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	Explain the four basic topologies used in networks. List advantages and disadvantages of each of them.	L1,L2	1, 2	7
	b	What is meant by logical connection in TCP/IP. Explain with diagram how the identical objects interact.	L1,L2	1, 2	7
	c	What is data communication? Explain its characteristics and components.	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 each layer of the TCP/IP and its responsibility.	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	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 3 different HDLC frames with diagram.	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	Explain CRC encoder and decoder for 4 bit dataword.	L1,L2,L3	2, 3	7
	b	Explain stop and wait protocol with FSM and Flow diagram.	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	Write Dijkstra's algorithm to compute shortest path with an example.	L1,L2,L3	2, 3	7
	c	Why is subnetting used and explain its importance.	L1,L2,L3	2, 3	6
		OR			
Q. 06	a	Define and explain routing and forwarding in network layer.	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	Draw the FSM diagrams for connectionless and connected oriented services offered by transport layer.	L1,L2,L3	3, 4	7
	b	List the services and applications of UDP.	L1,L2,L3	3, 4	7
	c	Explain Go-Bank-N 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 with example stop and wait protocol.	L1,L2,L3	3, 4	6
		Module-5			
Q. 09	a	Explain Standard and Non-Standard Application Layer 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 how data connections happens in File Transfer Protocol.	L1,L2,L3	3, 4	7
	b	List the difference between local and remote logging.	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