O.P.Code: 23CS1001	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. II Year II Semester Regular Examinations July/August-2025

DATA COMMUNICATIONS AND NETWORKING

CSE (Internet of Things and Cyber security Including Block Chain Technology)

Time: 3 Hours **Max. Marks: 70**

PART-A

(Answer all the Questions **10 x 2 = 20** Marks)

1	a	Define Switching.	CO1	L1	2M
	b	List out the components of DCN.	CO1	L1	2M
	c	What are the design issues occurred in data link layer?	CO2	L2	2M
	d	Illustrate simplest protocol with neat sketch.	CO3	L3	2M
	e	What is Logical address?	CO3	L1	2M
	f	List the applications of ICMP and IGMP.	CO3	L1	2M
	g	What are the services provided by transport layer?	CO4	L1	2M
	h	Draw the TCP header format.	CO4	L1	2M
	i	Differentiate between HTTP and HTTPS.	CO5	L4	2M
	j	List two major differences between TCP and UDP.	CO6	L1	2M

PART-B

(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2	a	Describe various transmission modes in data communication.	CO1	L2	5M
	b	Describe about Time Division Multiplexing.	CO1	L2	5M
		OR			
3	a	Explain advantages and disadvantages of Multiplexing.	CO1	L2	5M
	b	Explain about ATM Networks.	CO1	L2	5M

UNIT-II

4	a	Explain Stop-and-Wait Automatic Repeat Request Protocol.	CO2	L2	5M
	b	Explain the Time-Division Multiple Access (TDMA).	CO4	L2	5M
		OR			
5	a	Discuss about HDLC Protocol with its frames.	CO2	L2	5M
	b	Explain the Frequency-Division Multiple Access (FDMA).	CO4	L2	5M

UNIT-III

6	a	Describe about techniques involved in packet forwarding.	CO3	L2	5M
	b	Difference between unicast and multicast routing	CO3	L4	5M
		OR			
7	a	What is tunnelling? Explain about steps involved in tunnelling.	CO3	L2	5M
	b	Illustrate about multicast routing with neat sketch.	CO3	L2	5M

UNIT-IV

8	a	Explain the following in closed loop congestion control. i) Choke Packet ii) Explicit Signaling.	CO4	L2	5M
	b	Explain Leaky bucket algorithm with suitable diagram	CO4	L2	5M
		OR			
9	a	Discuss about Open Loop Congestion Control and its types.	CO4	L2	5M
	b	Explain the TCP protocol with neat sketch.	CO4	L2	5M

UNIT-V

10	a	Explain the hierarchical structure of the Domain Name System (DNS) and the role of different servers.	CO5	L2	5M
	b	Explain the basic operations of SNMP. What are the components involved in SNMP-based communication?	CO5	L2	5M
		OR			
11	a	Compare the OSI and TCP/IP models. Highlight the similarities and differences.	CO5	L4	5M
	b	Describe the working of Distance Vector and Link State Routing Algorithms with diagrams.	CO5	L2	5M

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