Reg. No.																

Question Paper Code	14097

B.E. / B.Tech./ M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

Fifth Semester

Computer Science and Engineering

(Common to Information Technology , Computer Science and Engineering (AIML) , Computer and Communication Engineering & M.Tech. Computer Science and Engineering (5Years Integrated))

20CSPW401 - COMPUTER NETWORKS WITH LABORATORY

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	TCP connections are: (a) Full Duplex (b) Half Duplex (c) Simplex (d) None of the above	1	K1	CO1
2.	The physical layer of the OSI model is responsible for: (a) Error detection (b) Converting data formats (c) Mechanical and electrical specifications (d) Routing data packets	1	K1	CO1
3.	Twisted-pair cable consists of: (a) One insulated copper wire (b) Two separately insulated copper wires twisted around each other (c) Fiber optic strands (d) Metallic shield only	1	K1	CO2
4.	The amount of data transmitted successfully over a network in a given time is called: (a) Latency (b) Packet loss (c) Throughput (d) Jitter	1	K1	CO2
5.	Error detection techniques used by Data Link Layer include: (a) Parity bit (b) Checksum (c) CRC (d) All of the above	1	K1	CO3
6.	Which topology is used in Ethernet? (a) Bus (b) Ring (c) Star (d) Mesh	1	K1	CO3
7.	IPv4 supports _____ different types of addressing modes. (a) 2 (b) 3 (c) 4 (d) 5	1	K1	CO4
8.	Common metrics used in routing table: (a) Network, Mask, Cost (b) Source IP, Destination IP, Protocol (c) MAC address, IP address (d) Payload, Header, Checksum	1	K1	CO4
9.	SCTP supports multiple IP addresses for a single endpoint. This feature is known as: (a) Load balancing (b) Multihoming (c) Multiplexing (d) Port forwarding	1	K1	CO5
10.	What is a DNS resolver? (a) A server that stores DNS records for domains (b) A client that initiates DNS queries on behalf of user applications (c) A firewall protecting DNS servers (d) A tool to block domains	1	K1	CO6

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

		Marks	K – Level	CO
11.	List the different types of networks.	2	K1	CO1
12.	Define Service Point Addressing.	2	K1	CO1
13.	What is circuit switching and packet switching?	2	K1	CO1
14.	Define Jitter.	2	K1	CO1
15.	What is Slotted ALOHA?	2	K1	CO1
16.	What are the different states of piconet?	2	K1	CO3

17.	List the features of Network Layer.		*2*	*K1*	*CO4*
18.	What is the purpose of service model?		*2*	*K1*	*CO4*
19.	What is fragmentation and reassembly?		*2*	*K1*	*CO5*
20.	What is the need of urgent pointer in TCP packet format?		*2*	*K1*	*CO5*
21.	What is a proxy server in HTTP?		*2*	*K1*	*CO6*
22.	What is FTP?		*2*	*K1*	*CO6*

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a)	Explain in detail about OSI layers with a neat sketch.	*11*	*K2*	*CO1*
		OR			
	b)	Illustrate in detail about working procedure, advantages, disadvantages and applications of different topologies.	*11*	*K2*	*CO1*
24.	a)	Explain the various types of transmission media with its applications and structure.	*11*	*K2*	*CO2*
		OR			
	b)	Explain CRC division using polynomials.	*11*	*K2*	*CO2*
25.	a)	Explain in detail about CSMA and persistent methods used in it.	*11*	*K2*	*CO3*
		OR			
	b)	Summarize in detail about modes, station types and access methods in HDLC protocol.	*11*	*K2*	*CO3*
26.	a)	Show Internet Protocol (IP) with its datagram format and detail about all the fields.	*11*	*K2*	*CO4*
		OR			
	b)	Explain the various congestion control mechanisms in TCP.	*11*	*K2*	*CO4*
27.	a)	Explain about TCP packet format with a neat sketch.	*11*	*K2*	*CO5*
		OR			
	b)	Outline in detail about packet format of SCTP with a neat sketch.	*11*	*K2*	*CO5*
28.	a)	Explain the methods and status codes used in HTTP.	*11*	*K2*	*CO6*
		OR			
	b)	Explain the concepts of SNMP with its MIB structure.	*11*	*K2*	*CO6*