Course Code: **23CS5T02**

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

III - B.Tech I-Semester Regular Examinations (BR23), Nov/Dec - 2025

COMPUTER NETWORKS (CSE)

Time: 3 hours Max. Marks: 70

Question Paper consists of Part-A and Part-B
*Answer **ALL** the question in **Part-A** and**Part-B***

PART–A (10X2 = 20M)

		Marks	CO	BL
1. a)	Define protocol? Explain types of networks	(2M)	1	2
b)	Describe various network topologies.	(2M)	1	2
c)	Define flow control and error control.	(2M)	2	3
d)	Define flow control in Data Link Layer	(2M)	2	2
e)	Explain ALOHA and types of ALOHA	(2M)	3	3
f)	Define the following: a)CSMA b) CSMA/CD c)CSMA/CA	(2M)	3	3
g)	Compare IPV4 and IPV6.	(2M)	4	2
h)	What is ICMP and its purpose?	(2M)	4	2
i)	Distinguish between connection-less and connection-oriented protocol in transport layer?	(2M)	5	2
j)	What is the purpose of Domain Name System?	(2M)	5	2

PART–B (5X10 = 50M)

2a.	Explain the functionality of each layer in OSI reference model.	5(M)	1	2
b.	What is Network topology? List any 3 network topologies.	5(M)		
	(OR)			
3a.	Explain the layers of TCP/IP (or) Internet architecture in detail	5(M)	1	2
b.	Discuss about various Guided media.	5(M)		

4a.	What are the different types of error detection methods? Explain the CRC error detection technique using generator polynomial x4+x3+1 and data 11100011.	5(M)	2	3
b.	Explain in detail about sliding window protocols.	5(M)		
	(OR)			
5a.	Illustrate various flow control mechanisms or reliable transmission.	10(M)	2	3

6a.	Write in detail on Time–Division Multiplexing and Frequency Division Multiplexing.	5(M)	3	2
b.	Compare Fast Ethernet and Gigabit Ethernet	5(M)		
	(OR)			
7a.	What is the purpose of CSMA with Collision Detection? Explain it.	5(M)	3	3
b.	Explain about the token ring mechanism in detail.	5(M)		

8a.	Explain the following protocols: i) ARP ii) DHCP.	5(M)	4	2
b.	Draw the IPV4 Header format and explain the fields.	5(M)		
	(OR)			
9a.	Demonstrate about the Distance Vector Routing Algorithm with example.	5(M)	4	3
b.	With neat sketch explain Circuit switching and Packet switching.	5(M)		

10a.	Define UDP Datagram and Explain the UDP frame format?	5(M)	5	2
b.	Discuss the following with respect to Transmission Control Protocol i. TCP connection management modelling ii. TCP transmission policy iii. TCP segment header.	5(M)		
	(OR)			
11a.	Discuss about Following Application layers protocols a) DNS b) b)HTTP	5(M)	5	2
b.	Describe SMTP, FTP protocols.	5(M)		

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