

**BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)**

III - B. Tech I-Semester Supplementary Examinations (BR23), Mar/Apr - 2026

COMPUTER NETWORKS (COMMON TO CSE-AI&DS, AIML)

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) What is the main function of the physical layer in the OSI model?	(2M)	CO1	BL1
b) How does the OSI model differ from the TCP/IP model?	(2M)	CO1	BL1
c) Name any two guided transmission media?	(2M)	CO2	BL1
d) Write a short note on Fast Ethernet and Gigabit Ethernet.	(2M)	CO2	BL2
e) Define routing? List any two routing algorithms?	(2M)	CO3	BL2
f) Why we need to change from IPv4 to IPv6?	(2M)	CO3	BL1
g) How does the transport layer perform duplication control?	(2M)	CO4	BL1
h) Which protocol is unreliable but fast?	(2M)	CO4	BL1
i) Define SMTP?	(2M)	CO5	BL1
j) What are the groups of HTTP header?	(2M)	CO5	BL2

PART-B (5X10 = 50M)

2 a. Draw the OSI layer and explain the functionalities of each layer in detail.	5(M)	CO1	BL2
b. Define Computer Network and explain types of networks	5(M)	CO1	BL2
(OR)			
3 a. Demonstrate TCP/IP Protocol suite with neat sketch.	5(M)	CO1	BL2
b. Summarize the history of the Internet and its significance.	5(M)	CO1	BL2
4 a. Explain how framing is done using bit and byte-oriented protocols.	5(M)	CO2	BL2
b. Compare CSMA/CD and CSMA/CA protocols.	5(M)	CO2	BL2
(OR)			
5 a. Compare various sliding window protocols of data link layer.	5(M)	CO2	BL2
b. Discuss various error detection methods in detail with example	5(M)	CO2	BL2
6 a. Discuss short notes on CIDR or Supernetting.	5(M)	CO3	BL2
b. Explain different Congestion control algorithms with examples.	5(M)	CO3	BL2
(OR)			
7 a. State the major difference between Distance Vector Routing and Link state Routing with example.	5(M)	CO3	BL3
b. What is NAT? Explain how address translation is done using NAT?	5(M)	CO3	BL2

- 8 a. Discuss features of TCP. Draw TCP segment format and explain its fields. 5(M) CO4 BL2
b. Distinguish between connection-less and connection-oriented protocol in transport Layer. 5(M) CO4 BL3

(OR)

- 9 a. Explain TCP connection management (or) TCP architecture. 5(M) CO4 BL2
b. Differentiate between TCP and SCTP protocols in Transport Layer 5(M) CO4 BL3

- 10 a. Explain email message transfer using Simple Mail Transfer Protocol. 5(M) CO5 BL2
b. Discuss the features of HTTP and discuss how HTTP works 5(M) CO5 BL2

(OR)

- 11 a. Discuss about world wide web in detail. 5(M) CO5 BL3
b. Explain the role of DNS on a computer network (or) domain name resolution process. 5(M) CO5 BL2
