

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2024

**Subject Code:3161007**

**Date:02-12-2024**

**Subject Name: Computer Networks**

**Time:02:30 PM TO 05:00 PM**

**Total Marks:70**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
<b>Q.1</b> (a) What is Computer Network? List out few uses of Computer Networks.	<b>03</b>
(b) Compare OSI model vs. TCP/IP model.	<b>04</b>
(c) Explain the need for physical layer. Classify and explain Transmission Media.	<b>07</b>
<b>Q.2</b> (a) List out few design issues for the layers.	<b>03</b>
(b) Compare: Connection-Oriented Services vs. Connection-Less Services	<b>04</b>
(c) Explain Stop & Wait ARQ in detail.	<b>07</b>
<b>OR</b>	
(c) Draw and explain ISO OSI model.	<b>07</b>
<b>Q.3</b> (a) What is ARQ? List out major ARQ protocols.	<b>03</b>
(b) Compare: Circuit Switching vs. Packet Switching	<b>04</b>
(c) Explain various network topologies with necessary diagrams and examples.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Explain the terms: Unicasting, Multicasting and Broadcasting	<b>03</b>
(b) What is Header? What type information Header carry? Also explain need for Header.	<b>04</b>
(c) What is Framing? Explain need for framing. Discuss byte stuffing and unstuffing in detail.	<b>07</b>
<b>Q.4</b> (a) Draw and explain about IP addressing in detail.	<b>03</b>
(b) Draw and explain Wireless LAN in detail.	<b>04</b>
(c) Explain CSMA/CD with necessary diagrams.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) Explain Hub, Bridge, Switch and Router.	<b>03</b>
(b) Explain Pure ALOHA with necessary diagrams.	<b>04</b>
(c) What is Routing? Explain any one routing algorithm in detail with necessary diagrams.	<b>07</b>
<b>Q.5</b> (a) What is Process to Process communication? Explain how transport layer performs it.	<b>03</b>
(b) What is HTTP? Draw and explain Client-Server communication.	<b>04</b>
(c) What is Firewall? Write a note on Network Security.	<b>07</b>
<b>OR</b>	
<b>Q.5</b> (a) What is Security? Explain need for security in Internet.	<b>03</b>
(b) Explain User Datagram Protocol in detail.	<b>04</b>
(c) Write a note on DNS.	<b>07</b>

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