

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2023**

**Subject Code:3143201****Date:11-07-2023****Subject Name:Data Communication & Computer Networks****Time:10:30 AM TO 01:00 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.

	<b>Marks</b>
<b>Q.1</b> (a) What are the goals of computer network?	<b>03</b>
(b) What is network topology? Explain the different network topologies.	<b>04</b>
(c) Explain the TCP/IP reference model with neat diagram.	<b>07</b>
<b>Q.2</b> (a) Compare analog and digital transmission.	<b>03</b>
(b) Explain ASK, FSK, and PS with suitable diagram.	<b>04</b>
(c) What is multiplexing? Explain in detail about various types of multiplexing.	<b>07</b>
<b>OR</b>	
(c) Explain the various transmission media for data communication.	<b>07</b>
<b>Q.3</b> (a) What is the difference between Broadcasting and Multicasting?	<b>03</b>
(b) Explain sliding window protocol.	<b>04</b>
(c) What is high level data link control (HDLC)? Explain HDLC frame format in detail.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Differentiate between TCP and UDP.	<b>03</b>
(b) With neat sketch explain the basic concept involved in Elementary Protocol: stop and wait.	<b>04</b>
(c) Explain in details about Go-Back-N ARQ.	<b>07</b>
<b>Q.4</b> (a) Why ipv6 is preferred over ipv4?	<b>03</b>
(b) Describe CSMA/CD protocol in Ethernet.	<b>04</b>
(c) Explain the distance vector routing with suitable example.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) A network on the internet has a subnet mask of 255.255.240.0. What is the maximum number of hosts it can handle?	<b>03</b>
(b) How congestion occurs in a network?	<b>04</b>
(c) Describe the role of network layer and transport layer in TCP/IP model.	<b>07</b>
<b>Q.5</b> (a) What is the use of FTP?	<b>03</b>
(b) Describe importance of DNS in application layer.	<b>04</b>
(c) What is World Wide Web? Explain details about HTTP.	<b>07</b>
<b>OR</b>	
<b>Q.5</b> (a) What is an Electronic mail?	<b>03</b>
(b) What is SNMP? Briefly discuss the SNMP model components.	<b>04</b>
(c) Explain public key algorithms – RSA.	<b>07</b>

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