

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2018****Subject Code:2140709****Date:28/11/2018****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.

		MARKS
<b>Q.1</b>	(a) Explain following Terms: 1. Propagation Delay. 2. Super netting. 3. Tunneling.	<b>03</b>
	(b) Explain Physical Address, IP address, Port Address in brief.	<b>04</b>
	(c) Explain functionality of Bridge, Hub, Switch, Router, and Gateway.	<b>07</b>
<b>Q.2</b>	(a) What is topology? Explain star topology in brief.	<b>03</b>
	(b) What is network? Explain in brief LAN and MAN.	<b>04</b>
	(c) Draw the layered architecture of OSI reference model and write the at least two services provided by each layer of the model.	<b>07</b>
	<b>OR</b>	
	(c) Discuss transport layer multiplexing and demultiplexing concepts.	<b>07</b>
<b>Q.3</b>	(a) What is client server architecture? Explain merits and demerits of it.	<b>03</b>
	(b) Write a short note on CRC.	<b>04</b>
	(c) What do you mean by congestion and overflow? Explain the slow-start component of the TCP congestion-control algorithm	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Draw and explain Ethernet header.	<b>03</b>
	(b) How UDP checksum is calculated? Explain it with example.	<b>04</b>
	(c) Explain TCP segment structure and justify the importance of its field values.	<b>07</b>
<b>Q.4</b>	(a) What is role of DNS (Domain Name Server) in internet?	<b>03</b>
	(b) Give difference between flow control versus Congestion Control	<b>04</b>
	(c) Explain layered architecture of TCP/IP model and write service provided by at least two layer of the model.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Give difference between connection oriented and connection less services.	<b>03</b>
	(b) Differentiate Broadcast and multicast with their functionality.	<b>04</b>
	(c) Explain IPv4 datagram format and importance of each field	<b>07</b>
<b>Q.5</b>	(a) Discuss parity check for error detection in data transfer.	<b>03</b>
	(b) Compare TCP and UDP.	<b>04</b>
	(c) Explain distance vector routing algorithm.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Explain CSMA/CD Protocol	<b>03</b>
	(b) Differentiate between IPv4 and IPv6.	<b>04</b>
	(c) Explain Link-State routing algorithm.	<b>07</b>

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