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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (NEW) EXAMINATION – WINTER 2017

Subject Code: 2140709 **Date:14/11/2017**

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
Q.1	**(a)**	Draw network diagram of 7 pc, 2 switch and one router, then assign appropriate IP address to devices/interfaces.	**03**
	(b)	Explain packet fragmentation with example.	**04**
	(c)	Explain functionality of Repeater, HUB, Bridge, Switch, Router and Gateway.	**07**
Q.2	**(a)**	Give differences between Connection oriented versus Connection less services	**03**
	(b)	Give differences between Flow Control versus Congestion control	**04**
	(c)	Draw the OSI reference model. Explain the functionality of each layer in brief.	**07**
		OR	
	(c)	Show tunneling of IP v6 packet over IP v4 router network.	**07**
Q.3	**(a)**	What is the role of Domain Name Server (DNS) in Internet?	**03**
	(b)	What is HTTP? Differentiate its persistent and non-persistent types with request-response behavior of HTTP.	**04**
	(c)	Explain any two Application Layer Protocol.	**07**
		OR	
Q.3	**(a)**	List and explain major functionalities provided by E-mail service.	**03**
	(b)	What is socket? Explain its importance at transport layer protocols.	**04**
	(c)	Write short note on Network Address Translation (NAT) protocol.	**07**
Q.4	**(a)**	Describe the working of sliding window protocol.	**03**
	(b)	Explain the piggybacking phenomenon.	**04**
	(c)	Explain Transmission Control Protocol with TCP header fields.	**07**
		OR	
Q.4	**(a)**	Give differences between TCP and UDP.	**03**
	(b)	Discuss transport layer multiplexing and Demultiplexing concept.	**04**
	(c)	Explain Distance Vector routing with example.	**07**
Q.5	**(a)**	Compare IPv4 and IPv6.	**03**
	(b)	What do you mean by random access protocols? Explain slotted ALOHA in brief.	**04**
	(c)	What is IP address? What is Subnet? Explain different IP address Classes.	**07**
		OR	
Q.5	**(a)**	Explain CSMA/CD Protocol.	**03**
	(b)	Explain CRC code generation with example.	**04**
	(c)	What is bit and byte stuffing? Explain with example.	**07**

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