Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-Vth Examination December 2010

Subject code: 150702

Subject Name: Computer Network

Date: 15 /12 /2010 **Time: 03.00 pm - 05.30 pm**

Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	i) Explain the following terms : Jitter , Bandwidth and throughput.	**03**
		ii) Which of the OSI layers handles each of the following :	**04**
		-Determine which route through the subnet to use.	
		-Dividing the transmitted bit stream into frames.	
		-Encryption and compression of the information.	
		-Flow control between source and destination node.	
	(b)	Classify various transmission media for computer networks, and compare UTP and fiber optic media.	**07**
Q.2	**(a)**	What is framing? Explain the various methods used for carrying out the framing in detail.	**07**
	(b)	Write the functions of Media Access Control sub layer. And Compare pure ALOHA and slotted ALOHA.	**07**
		OR	
	(b)	A bit stream 110101011 is transmitted using standard CRC method . The generator polynomial is x^4+x+1 .Show the actual bit string transmitted. Also Explain the error detecting and correcting code with example.	**07**
Q.3	**(a)**	Explain the one bit sliding window protocol and go back n protocol. Write down the drawback of both the protocols.	**07**
	(b)	i) Compare datagram subnet and virtual-circuit subnets.	**04**
		ii) What is the serious drawback of distance vector routing ? explain it with example.	**03**
		OR	
Q.3	**(a)**	Explain wireless LAN protocol and explain hidden station and exposed station problem of it. What is the solutions to this problem. Ecplain.	**07**
	(b)	i) What are the various congestion prevention policies at datalink , network and transport layer of the OSI ?	**04**
		ii) Explain the leaky bucket algorithm.	**03**
Q.4	**(a)**	Explain and compare distance vector routing and link state routing algorithm.	**07**
	(b)	Draw IP headed and explain the each field of the header. Also explain the concept of fragmentation in detail.	**07**
		OR	
Q.4	**(a)**	Explain the following concepts : Tunneling , Network address translation and DHCP.	**07**
Q.4	**(b)**	List the various duties of the transport layer and explain each in brief. Compare UDP and TCP	**07**

Q.5 **(a)** How does DNS work? Explain. **07**

(b) An organization is granted the block 211.17.180.0/24. The administrator wants to create 32 subnets. **07**

a) Find the subnet mask.
b) Find the number of addresses in each subnets.
c) Find the first and last addresses in subnet 1.
d) Find the first and last addresses in subnet 32

OR

Q.5 **(a)** Explain the e-mail architecture and services. Write short note on POP3 and MIME. **07**

(b) Write note on: **07**
Internet Control Message Protocol (ICMP) , Bridge and Switches.

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