Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014

Subject code: 1724401 Date: 18-06-2014

Subject Name: High Performance Communication Networks

Time: 02:30 pm - 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.**

Q.1	**(a)**	Explain following basic network mechanisms: Multiplexing, Switching	**07**
	(b)	Explain Selective Repeat protocol in detail and compare with Alternating Bit Protocol, Go Back N protocol.	**07**
Q.2	**(a)**	What is the Ethernet (IEEE 802.3)? Explain Media Access Control (MAC) layer of it.	**07**
	(b)	Explain IPv4 protocol with a TCP/IP network, symbolic representation of the transfers of packets and IP header.	**07**
		OR	
	(b)	Explain fully dijkstraôs algorithm	**07**
Q.3	**(a)**	Explain the performance of circuit-switched networks.	**07**
	(b)	Explain the optical loop carrier system and passive optical networks	**07**
		OR	
Q.3	**(a)**	Discuss the advantages and disadvantages of following features of ATM: connection-oriented service, fixed cell size, statistical multiplexing, and allocating resources.	**07**
	(b)	Explain VCI & VPI with all details.	**07**
Q.4	**(a)**	Explain IP over ATM, multiprotocol over ATM.	**07**
	(b)	With reference to link lever design of wireless network, explain modulation techniques, channel coding and link layer retransmission, flat-fading countermeasures.	**07**
		OR	
Q.4	**(a)**	For a datagram networks, explain discrete time queue, and M/GI/Ð queue in details.	**07**
	(b)	Explain in details: static wavelength assignment, dynamic wavelength assignment and blocking.	**07**
Q.5	**(a)**	With reference to optical switching, explain distributed buffer, input buffer, and output buffer in details.	**07**
	(b)	With reference to optical switching, compare packet switching with circuit switching. Also explain packet switching in details.	**07**
		OR	
Q.5	**(a)**	Explain fully FDDI standard.	**07**
	(b)	Explain fully the Distributed Queue Dual Bus standard.	**07**

****