Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE- Vth SEMESTER–EXAMINATION – MAY/JUNE - 2012

Subject code: 150702   **Date: 02/06/2012**
Subject Name: Computer Network
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)**   **07**
      (i) Which network replaced X.25 networks? What is the essence of this new network?   **04**
      (ii) What is cyclic redundancy check? Show the calculation polynomial code checksum for a frame 1101011011 using the generator x^4+x+1.   **03**
  (b) What is the purpose of physical layer? Explain multimode fiber and single mode fiber. Explain the transmission of light through fiber.   **07**

Q.2 **(a)** Explain link state routing with all the five steps in detail.   **07**
  (b) Explain the term piggybacking, sending window and receiving window. Explain One-Bit sliding window protocol.   **07**

<p align="center">OR</p>

  (b) Explain the following two collision free protocol.   **07**
      (i) A bit map protocol
      (ii) Binary countdown

Q.3 **(a)** How route discovery is done in Ad Hoc networks. Explain format of ROUTE REQUEST and ROUTE REPLY packet.   **07**
  (b) Explain the following techniques for achieving good quality of service.   **07**
      (i) Traffic shaping
      (ii) Leaky bucket algorithm

<p align="center">OR</p>

Q.3 **(a)** Explain congestion control in Datagram subnets. Write about hop by hop choke packets scheme.   **07**
  (b) Write about OSPF(open shortest path first). Which four classes of routers are distinguished by OSPF?   **07**

Q.4 **(a)**   **07**
      (i) Explain following with respect to ATM(asynchronous transfer mode)   **04**
        a) Virtual circuits
        b) Cells
      (ii) Define   **03**
        a) nonpersistent CSMA
        b) p-persistent CSMA.

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(b)		**07**
(i)	Which two different modes of operation are supported by Gigabit Ethernet?	**04**
(ii)	What is the similarity and difference between switch and bridge. Also explain cut through switched.	**03**

OR

Q.4	**(a)**	**07**
	(i) Write the two differences between Ethernet and wireless LAN 802.11 in the physical and data link layers.	**04**
	(ii) Explain switched Ethernet.	**03**
	(b)	**07**
	(i) Explain spanning tree bridges	**04**
	(ii) Explain remote bridges.	**03**

Q.5	**(a)** Explain connection establishment and connection release in Transport protocols.	**07**
	(b) E-mail systems contain which two subsystems? Write the five basic functions provided by e-mail system.	**07**

OR

Q.5	**(a)** Write about flow control and buffering mechanism in Transport protocols.	**07**
	(b) Describe the built in HTTP request methods.	**07**

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