

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**

OR

(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

OR**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.

- (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
