

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-V • EXAMINATION – WINTER • 2014

Subject Code: 150702**Date: 28-11-2014****Subject Name: Computer Network****Time: 10.30 am - 01.00 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) Draw diagram of OSI reference model? What are the benefits of layering approach in OSI model? **07**
- (b) Give differences between **07**
1. Connection oriented versus Connection less services
 2. Flow Control versus Congestion control
- Q.2** (a) Write a note on guided and un-guided transmission medium **07**
- (b) Enlist various framing techniques used in data link layer. Explain any one in detail with suitable example. **07**
- OR**
- (b) Explain the usage of following devices. Also discuss the OSI layer at which they are used. **07**
1. Bridge
 2. Repeater
 3. Hub and Switch
 4. Router
 5. Gateway
- Q.3** (a) What is ALOHA? Explain variants of ALOHA protocol. **07**
- (b) What is the difference between error detection and correction? Explain any one error correction technique with suitable example. **07**
- OR**
- Q.3** (a) Explain CSMA and CSMA/CD protocols. **07**
- (b) 1. Write and explain statement of Optimality Principle with example. **07**
2. Explain the word jitter control with suitable example.
- Q.4** (a) Explain following with respect to IP address. Also give proper examples of each. **07**
1. Structure of IPv4 address
 2. Subnet mask
 3. Default gateway
- (b) Explain shortest path routing protocol with suitable example. **07**
- OR**
- Q.4** (a) What is subnet? Explain various classes of IPv4 address with respect to bits reserved for host_id and net_id. Give example and ranges of each class of IPv4 address. **07**
- (b) What is congestion? What are the reasons behind congestion? Explain choke packet mechanism for congestion control. **07**

- Q.5** (a) Enlist services provided by transport layer. What is socket? Explain its importance at transport layer protocols. **07**
- (b) What is the role of Domain Name Server (DNS) in Internet? Explain the hierarchy of various domain names. **07**
- OR**
- Q.5** (a) 1. Give differences between TCP and UDP. **07**
2. Frame = 1 1 0 1 0 1 1 1 1 , Generator = 1 0 0 1 1 Calculate CRC.
- (b) Write notes on following: 1. HTTP 2. MIME **07**
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