

**GUJARAT TECHNOLOGICAL UNIVERSITY****M.E.- SEMESTER-I • EXAMINATION – WINTER 2013****Subject Code: 2715304****Date: 01-01-2014****Subject Name: Advanced Computer Networks****Time: 10.30 To 13.00****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) Differentiate between TCP and UDP **07**  
(b) Briefly explain RARP Protocol. How does RARP works? **07**
- Q.2** (a) Briefly explain ARP Protocol. How does ARP works? **07**  
(b) Write note on ISDN amalgamation with mobile and data services **07**
- OR**
- (b) Write in detail features of IPv6 in the context of advanced communication networks. **07**
- Q.3** (a) Write about TCP variations for performance enhancement **07**  
(b) Explain how collision detection could fail if it was possible to send packets shorter than the allowed minimum. **07**
- OR**
- Q.3** (a) What would happen if an IP packet is received with a checksum error? Does it return an error or drop the packet? Explain. **07**
- (b) Explain what trade-offs are there between circuit-switched and packet-switched networks. Give an example for each type of network. **07**
- Q.4** (a) Differentiate between PSTN (Public Switched Telephone Network) and ISDN (Integrated Service Digital Network). **07**  
(b) What are the reasons for using the layered protocols? **07**
- OR**
- Q.4** (a) How many frames per second can gigabit Ethernet handle? Answer should take all relevant cases into account. **07**  
(b) A switch designed for fast Ethernet has a backplane that can move 10 Gbps. How many frames/sec can it handle in the worst case? **07**
- Q.5** (a) Consider the delay of pure ALOHA versus slotted ALOHA at low load. Which one is less? Explain your answer. **07**  
(b) Compare the public key encryption and digital signatures **07**
- OR**
- Q.5** (a) Write the short note of Transport Mode and Tunnel Mode **07**  
(b) Describe Security requirements, passive attack and active attack. **07**

\*\*\*\*\*