

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2014

Subject code: 715101N**Date: 13-06-2014****Subject Name: Network Programming****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) Define protocol. List out six protocols of application layer, and explain any two in detail. **07**
- (b) What is signal? Develop a C program to handle SIGINT signal. **07**
- Q.2** (a) Explain TCP connection establishment and connection termination process. **07**
- (b) Explain libpcap and libnet libraries in detail. **07**
- OR**
- (b) Explain zombie process with appropriate example. Which Linux command would be useful to list out zombie process of the system? **07**
- Q.3** (a) Explain TCP states with diagram. **07**
- (b) What is multicasting? How does socket multicasting work? Explain in detail. **07**
- OR**
- Q.3** (a) Differentiate between:
- i. read() & recv() **02**
- ii. Little Endian & Big Endian **05**
- (b) What is socket? Explain its role over client and server programming. Describe the APIs for UDP communication. **07**
- Q.4** (a) Explain multicast MAC address structure. What will be the destination MAC address if multicasting IP is 224.1.1.1? Explain in detail. **07**
- (b) Explain UDP header in detail. **07**
- OR**
- Q.4** (a) When to use UDP instead of TCP? How can you be sure that a UDP message is received by recipient? **07**
- (b) Explain External Data Representation (XDR) with suitable example. **07**
- Q.5** (a) Explain in detail:
- i. inet_addr **02**
- ii. htons **03**
- iii. memcpy **02**
- (b) Explain in detail:
- i. FTP **04**
- ii. Telnet **03**
- OR**
- Q.5** (a) Write a C program to Create 5 processes but not from the common parent. meaning, each child creates a new process. **07**
- (b) How to get client's address / host-name from server socket application? Explain with suitable APIs. **07**
