

GUJARAT TECHNOLOGICAL UNIVERSITY
M.E.- SEMESTER-I • EXAMINATION – WINTER 2013

Subject Code: 2715202**Date: 26-12-2013****Subject Name: Network Programming****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)** What is 'protocol'? Name at least three protocols in each layer of TCP/IP model. And describe their functionalities brief. **07**
- (b)** Explain UDP header in detail. **07**
- Q.2 (a)** Explain Internetworking Protocol (IP) in detail. **07**
- (b)** Explain in detail:
- i. inet_addr **02**
 - ii. htons **03**
 - iii. memcpy **02**
- OR**
- (b)** Explain in detail:
- i. FTP **04**
 - ii. Telnet **03**
- Q.3 (a)** What is signal? Develop a C program to handle SIGINT signal. **07**
- (b)** Why do one get "connection refused" when the server isn't running? **07**
- OR**
- Q.3 (a)** Differentiate between:
- i. read() & recv() **02**
 - ii. Little Endian & Big Endian **05**
- (b)** Explain TCP connection establishment and TCP connection termination process in detail. **07**
- Q.4 (a)** What is socket? Explain its role over client and server programming. Describe the APIs for UDP communication. **07**
- (b)** Which socket APIs are needed in order to develop TCP server application? What is the importance of listen () and accept () in those API? **07**
- OR**
- Q.4 (a)** Write a C program to Create 5 processes but not from the common parent. meaning, each child creates a new process. Cleanup the children using waitpid(). **07**
- (b)** Write a short note on "External Data Representation". **07**
- Q.5 (a)** Explain in detail about pipe IPC with suitable program. **07**
- (b)** Explain multicast MAC address structure. What will be the destination MAC address if multicasting IP is 224.1.1.1? Explain in detail. **07**
- OR**
- Q.5 (a)** What is Ethernet? Draw and explain all fields of Ethernet header. **07**
- (b)** When to use UDP instead of TCP? How can you be sure that a UDP message is received by recipient? **07**