

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014****Subject code: 3715101****Date: 06-01-2015****Subject Name: Network Programming (Core - II)****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)** In the case of parent child process scenario after fork(), Parent process will remove child process from process stat table after receiving child's exit status. What could be the possibilities if parent process is not properly handling child's exit status? If parent dies without handling child's exit status then who is going to handle that orphan child process? Explain the scenario with appropriate example. **07**
- (b)** Explain TCP connection establishment and connection termination process. **07**
- Q.2 (a)** What is 'protocol'? Explain FTP and Telnet in detail. **07**
- (b)** Develop a C program to handle SIGINT signal. SIGNAL will be raised by pressing CTRL - C. **07**
- OR**
- (b)** Explain in detail:
- i. DNS **04**
 - ii. ARP **03**
- Q.3 (a)** What is socket? Explain its role over client and server programming. Describe the APIs for UDP communication. **07**
- (b)** Why do one get "connection refused" when the server isn't running? **07**
- OR**
- Q.3 (a)** Differentiate between:
- i. sendto() & recvfrom() **02**
 - ii. Little Endian & Big Endian **05**
- (b)** Explain multicast MAC address structure. What will be the destination MAC address if multicasting IP is 224.0.0.1? Explain in detail. **07**
- Q.4 (a)** Explain in detail about pipe IPC with suitable C program. **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)** When to use UDP instead of TCP? How can you be sure that a UDP message is received by recipient? **07**
- (b)** What is Promiscuous mode? Explain BSD packet filter in detail. **07**
- Q.5 (a)** Explain sockaddr_in socket address structure in detail. **07**
- (b)** Write a short note on 'External Data Representation'. **07**
- OR**
- Q.5 (a)** Develop a TCP question answer server using appropriate Socket APIs. **07**
- (b)** Explain libpcap and libnet libraries in detail **07**
