Seat No.:_____ Enrolment No:_____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME Semester-I Examination Summer Exam (July) 2012

Subject code: 715101N Subject Name: Network Programming

Date: 05-07-2012 Total Marks = 70 Time: 14.30 am - 17.00 pm

Instructions:

1. Attempt Question No. 1, which is compulsory and answer any five from the rest.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Question 1: [2 Marks X10=20 Marks]

a. Define little byte endian order, big byte endian order.
b. What is Client Server Computing ?
c. What is Remote Procedure Call?
d. Differentiate between Synchronous and Asynchronous communication.
e. Why is it a good idea to close () each socket when you are done with it?
f. What is the use of Mutex?
g. Define TCP sockets.
h. What are the limitations of pipes?
i. Define concurrent servers and iterative servers.
j. What is the purpose of exec() functions in Linux?

Question 2: [10 Marks]

Explain the following system calls that a process can use to receive data through a socket:

. recv()
. recvfrom()
. recvmsg().

Bring out their differences by giving examples

Question 3:

a. Explain between the Bind function, connect and listen function [5 Marks]
b. Write a necessary line of code to create a Child Socket [5 Marks]

Question 4: [10 Marks]

Write a Concurrent server program which uses TCP and display a status message of the Server before call to fork, after fork and after socket closing by parent and child. Write a client to trigger the server operation.

Question 5: [5+5 Marks]

a. Define UDP communication. Explain client server communication with suitable example with diagram.
b. Explain the system calls for UDP communication.

Question 6:

a. Define TCP communication. [2 Marks]
b. Explain fork(), exit(), waitpid() functions. [3 Marks]

c. Explain the system calls for TCP communication. [2 Marks]
d. Explain about three way handshake algorithm (for connection). [3 Marks]

Question 7: [10 Marks]

a. Explain in detail about the pipe IPC.
b. Explain the function pipe.
c. Explain parent and child communication example with diagram.
d. Explain how fork function helps pipe IPC.
e. Explain how on the unix shell output from one program can be set as input for another program using pipe.