

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.
