

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER 2012

Subject code: 715101**Date: 08-01-2013****Subject Name: Network Programming****Time: 02.30 pm – 05.00 pm****Total Marks: 70****Instructions:**

1. Attempt question 1, which is compulsory and answer any five from the rest questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right hand indicate the marks.

Q. No. 1 Answer following questions briefly:

[2 Marks X 10 = 20 Marks]

- a) What is the purpose of DNS?
- b) What are the different problems used in fork function?
- c) Define little byte endian order, big byte endian order.
- d) Explain subnet mask.
- e) Which signals cannot be handled by a process?
- f) Explain Remote Procedure Call.
- g) Explain synchronous and asynchronous communication.
- h) What are the limitations of pipes?
- i) What is the purpose of exec() functions in Linux?
- j) Define UDP sockets.

Q. No. 2
Marks]

[4+6

- a) Explain about wait/waitpid functions needed in a forked application.
- b) 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 suitable examples.

Q. No. 3
Marks]

[5+5

- a) What is the function pipe? Explain Parent and Child communication with Diagram? What function helps Pipe IPC?
- b) What are the limitations of pipes?

Q. No. 4
Marks]

[6+4

- a) Explain in detail about TCP Communication with suitable diagrams. Explain all the system calls used for TCP Communication?
- b) What are the different domain (protocol family) and type values available for creating a socket.

Q. No. 5
Marks]

[5+5

- a) 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.
- b) Why UDP is termed as unreliable protocol? What is the purpose of IP fragmentation?

Q. No. 6
Marks]

[3+3+3

- a) Explain about three way handshake algorithm (for connection).
- b) Explain the system calls for UDP communication.
- c) Explain between the Bind function, connect and listen function.

Q. No. 7
Marks]

[4+6

- a) TCP is connection oriented, reliable protocol. Explain briefly.
- b) The simultaneous transmission of data to a number of stations is known as broadcast. Explain how can you achieve this using TCP/IP

Q. No. 8

[10 Marks]

Explain in detail about the following functions

- a. gethostbyname
- b. inet_ntoa
- c. htons
- d. inet_aton
- e. broadcast
