Odd Semester (2017-18)
Course Code: MCA816

Date:23-11-2017   Time: 9:00 am to 12:00 pm

Examination: End Sem
Course Name: Unix and Network Programming
Maximum Marks: 100

Instructions:
1. Answer ALL questions.
2. Rough work should NOT be done anywhere on the Question Paper.

Q 1   a) Explain with diagram how kernel and shell balances workload.   [8M]

   b) Explain with example   [12M]

   1) pwd   2) echo   3) cat   4) ls -a   5) bc   6) job

Q 2   a) Explain with example BRE and ERE.   [6M]

   b) Explain both file permission modes with example   [5M]

   c) Explain the commands used for creating, deleting and changing the directory   [3M]
   with example.

   d) Explain the 7 fields of ls -l command with example   [4M]

   e) Explain command with example: 1) at   2) grep   [2M]

Q 3   a) Write a note on synchronization and semaphores.   [10M]

   b) Write a program to catch alarm signal.   [8M]

Q 4   a) Write a note on pipe and named pipe   [8M]

   b) Write a program to get a string from the keyboard and write into memory. Also   [12M]
   write another program to read from the memory.

Q 5   a) Describe TCP protocol and 3-way handshaking scenario.   [8M]

   b) Write a client – server program for TCP echo client server.   [14M]

Department of Mathematical and Computational Sciences
National Institute of Technology Karnataka, Surathkal

Examination: Mid Sem
Course Name: Unix & Network
Programming
Maximum Marks: 50

Odd Semester (2017-18)
Course Code: MCA816

Date: 14/09/2017   Time: 10.30 AM to 12.00 PM

Instructions:
1. Answer ALL questions.
2. Rough work should NOT be done anywhere on the Question Paper.

Q 1 What is unix operating system? What are different features of unix OS. [6M]

Q 2 What are the different file types available with Advanced UNIX? [4M]

Q 3 Explain the following with example: [8M]

   a) Input and Output redirection symbols

   b) Environmental variables

   c) Buffering in unix

Q 4 Describe stat function with structure, file types and file access permission [8M]

Q 5 Differentiate soft and hard links? Explain with example [8M]

Q 6 Describe How process is created with program [10M]

Q 7 What is sticky bit ? How it operates? [2M]

Q 8 Explain [4M]

   a) init   b) daemon   c) at   d) BRE(Basic Regular Expressions)

Time:1 hr

Advanced UNIX Programming

1) In UNIX, the abort() function sends the _____ signal to the calling process, causing abnormal termination.   1M
a) SIGTERM   b) SIGSTOP   c) SIGABORT   d) SIGABRT

2)_____ command used to create named fifo   1M

3) The command **ipcs** provides information about?   2M

4) A mail box is an indirect mode of communication   1M
        a)True   b)False

5) write a program using FIFOs as IPC channels to make the client send the file name and to make the server send back the contents of the requested file if present.   12M

6) Explain **ftok** function with example   3M

7) Expalin Different Types of IPCS with limitations   5M

1. Write a shell script to examine all the number from 1 to 999 and display all those number whose sum of cube of the digit is equal to the number. e.g. 371 = 3*3*3+7*7*7+1*1*1

2. Write a shell script to input a number & display in words. eg: 756--Seven Five Six

3. Write a Shell script that displays list of all the files in the current directory to which the user has read, write and execute permissions.

4. Write a Shell Script to Display Number of Files and Directories in a Directory

5. (i) Write a Unix Shell Script which prints the following
   a. Current home directory.
   b. Current user name.
   c. The message "Today is :" with current date in MM/dd/yy format
   d. The message "No of users logged in :" with total no of current logged in users

   (ii) Write a shell script to rename file having extension .out to .exe