

**R13****Code No: 813AM****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA III Semester Examinations, August - 2017****LINUX PROGRAMMING****Time: 3 Hours****Max. Marks: 60****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 8 marks and may have a, b, c as sub questions.

PART - A**5 × 4 Marks = 20**

- 1.a) Write a bash script that displays a list of all the directory files in the current directory. [4]
- b) What are the differences among stat family (stat, fstat and lstat) of functions? [4]
- c) What are the differences between fork() and vfork() functions? [4]
- d) Give the syntax of semop() function. What are its uses? [4]
- e) Draw a diagram that shows the calling sequence of socket system calls for connection oriented communication between a Client and a Server. [4]

PART - B**5 × 8 Marks = 40**

- 2.a) Explain with examples the quoting methods in shell.
- b) Write an awk script to find the number of characters, words and lines in a file. [4+4]

OR

- 3.a) Explain the purpose of following commands:
i) chmod ii) tar
- b) Write a bash script that uses a function to find the factorial of a number. [4+4]

4. Write a C program that takes a file name as command-line argument and displays the following information on the file:
i) file type ii) last access time. [4+4]

OR

- 5.a) Write a C program to display all the directory files in the current directory.
- b) What is the main difference between mandatory file locking and advisory file locking? [4+4]

- 6.a) Explain with examples the different ways in which a process can respond to signals.
- b) Why were the signal facilities provided by Unix unreliable in older versions of Unix? [4+4]

OR

- 7.a) When a child process is created, what resources are inherited from its parent? What attributes are different between the parent and the child process?
- b) Explain with syntax the purpose of kill() function. [4+4]

- 8.a) How are the named and unnamed pipes created? What are the differences between them?
b) Explain with syntax the purpose of `popen()` and `pclose()` functions. [4+4]
OR
9. Explain with syntax the purpose of the following message queue functions:
a) `msgget()` b) `msgsnd()` c) `msgrcv()` d) `msgctl()` [8]
10. Write C Programs (`Send.c` and `Recve.c`) to perform the following:
One process reads a string from standard input device into a Shared memory segment.
Another process writes the same string from the Shared memory segment to the standard output device. [8]
OR
11. Write C Programs (`Server.c` and `Client.c`) for connection oriented communication between Client and Server processes to perform the following using sockets in the internet domain:
Client process sends a string to the Server process. The Server process receives the string, reverses it and sends it back to the Client process. [8]

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