

Code No: 115ED**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, March - 2017****LINUX PROGRAMMING****(Information Technology)****Time: hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) List some text processing Linux utilities. [2]
- b) Give any 3 examples for control structures in shell programming. [3]
- c) What is the difference between Linux file system and Windows file system? [2]
- d) How to identify your home directory in shell command line? [3]
- e) Where do we use 'nice' command in Unix C Shell? [2]
- f) What are the advantages of POSIX.1b timers over Unix timers? [3]
- g) Describe briefly the procedure for IPC between processes on a single computer. [2]
- h) Write about POSIX.1b semaphores. [3]
- i) What are recvfrom and sendto functions in UDP sockets. [2]
- j) What is 'fcntl' function in socket programming? [3]

PART - B**(50 Marks)**

2. Write about the following Unix commands with example.
Cal, date, echo, printf, bc, script, mailx, who, tty, sty. [10]
- OR**
- 3.a) What is bash in shell programming?
 - b) Write about shell variables in Unix shell syntax. [5+5]
4. Describe Unix file system advantages and also state different commands used in System calls for I/O operations. [10]
- OR**
- 5.a) What does directory file in UNIX contain?
 - b) Explore the following commands with examples. [5+5]
i) mkdir ii) rmdir iii) chdir iv) getcwd
6. What is Unix process status (ps) and explain the procedures for process creation, replacing a process image, waiting for a process, process termination, Zombie process. [10]
- OR**
7. How Unix kernel provides support for 'signals' and write about kill, raise, alarm, pause, abort and sleep functions used in Unix signals. [10]

8. List some APIs used for message queues and construct a sample code for Client – Server application using messages. [10]

OR

9. Write short notes on the following:

a) API's for semaphores

b) File locking with semaphores. [5+5]

10.a) Describe about Unix API for shared memory with examples.

b) Create a client-server interaction example using semaphores-shared memory. [5+5]

OR

11.a) What is socket address structure and compare various socket address structures?

b) Elaborate bind and listen functions in TCP sockets. [5+5]

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