

Code No: 125ED

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year I Semester Examinations, May - 2018****LINUX PROGRAMMING****(Information Technology)****Time: 3 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) What is the importance of /tmp and /etc directories? [2]
- b) List out the features of BASH shell. [3]
- c) What is a sticky bit? Why is it required? [2]
- d) Write down the differences between hard linking and soft linking. [3]
- e) Give the similarities and dissimilarities between parent and its child processes. [2]
- f) What is a zombie process and explain how it may manifest itself? [3]
- g) What are the advantages and disadvantages of pipes? [2]
- h) Illustrate popen() system call with an example. [3]
- i) Differentiate between a connection oriented protocol and connection less protocol. [2]
- j) Discuss the process of “destroying a shared memory segment”. [3]

PART - B**(50 Marks)**

- 2.a) Give the differences between grep, fgrep and egrep utilities.
- b) Explain briefly about different blocks in LINUX file system. [5+5]

OR

- 3.a) What is the significance of single quotes and double quotes? Explain various conditional expressions available in the Shell programming
- b) Give the syntax of ‘for’ and ‘case’ structures in Bash Shell and illustrate them with an example. [5+5]

- 4.a) Discuss the relative merits and demerits of lseek() system call.
- b) What are the standard I/O Streams for opening and closing a file? Explain briefly. [5+5]

OR

5. Explain the following system calls with illustrations: [10]
a) link() b) chmod() c) getcwd()

6. What are process identifiers? Explain the commands for getting different IDs of a calling process. [10]

OR

7. Describe the need and usage of the following system calls: [10]
a) kill() b) raise() c) alarm()

- 8.a) Compare the IPC functionality provided by message queues and fifos.
b) Discuss the relative merits and demerits of system V IPC Mechanisms. [5+5]

OR

9. List and explain the various data structures and system calls that are associated with semaphores. [10]

- 10.a) Explain how TCP maintains queue for listening socket.
b) Describe how to build a linked list of data objects in a shared memory segment with a sample program. [5+5]

OR

11. Describe the functionality of sockets in implementing remote system communication and explain various APIs associated with it. [10]

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