R15

Code No: 125ED

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, November/December - 2017
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)	Distinguish between absolute and relative pathname.	[2]
b)	Explain how files can be archived and extracted in Linux.	[3]
c)	What is a sticky bit?	[2]
d)	What is an inode?	[3]
e)	Give the list of functions that return various process identifiers.	[2]
f)	What are the different ways in which a process can terminate normally?	[3]
g)	Explain half-duplex and full-duplex pipes.	[2]
h)	Can unrelated processes exchange data with unnamed pipes? Explain.	[3]
i)	Give the generic socket address structure and explain the fields.	[2]
j)	Give the functions for forward/reverse lookup for hostname/service.	[3]

PART - B

(50 Marks)

2.a) Write a shell script to find the factorial of a given number.
b) Explain the workflow and the basic syntax of *awk*. [5+5]

OR

3.a) Write *sed* commands for the following:
i) Replace every occurrence of Nick with John in report.txt.
ii) Show only lines 12-18 of file.txt.
iii) Delete all leading blank lines of file.txt.
iv) Reverse characters of lines
v) Joining lines
b) Give an overview of file permissions in linux. [5+5]

4.a) What are the various file types in a UNIX system? Explain.
b) Explain the following functions of file system in UNIX:
i) link
ii) unlink
iii) remove [5+5]

OR

WWW.MANARESULTS.CO.IN

5.a) Explain the following functions associated with directories:
i) opendir
ii) rewinddir
iii) seekdir

b) What is a symbolic link? Give functions for creating and reading symbolic links. [5+5]

6.a) Explain the semantics of fork and vfork functions.

b) Explain the relationship of seven exec functions. [5+5]

OR

7.a) Give examples of C programs that result in zombie and orphan processes.

b) Give the syntax and explain the semantics of kill and raise functions. [5+5]

8. Give an overview of the implementation of message queues in UNIX. [10]

OR

9.a) Demonstrate with an example implementation of client server model using FIFOs.

b) Write a program to illustrate file locking using semaphores. [5+5]

10.a) Give the syntax and semantics of socket function for creating a socket.

b) Make comparison of features of various forms of IPC. [5+5]

OR

11. Give an overview of the implementation of shared memory in UNIX. [10]

---ooOoo---

WWW.MANARESULTS.CO.IN