

**R13**

Code No: 117EE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November/December - 2017

**LINUX PROGRAMMING**

(Computer Science and Engineering)

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 are shell responsibilities? [2]
- b) What are the applications of awk? [3]
- c) What are hard links? [2]
- d) Write about file locking? [3]
- e) What are reliable signals? [2]
- f) Differentiate threads and processes. [3]
- g) What is IPC? [2]
- h) Explain popen. [3]
- i) What are Berkeley sockets? [2]
- j) List the APIs for shared memory. [3]

**PART-B**

(50 Marks)

- 2.a) Explain associative arrays.
- b) Write a shell script to find the factorial of a number. [5+5]

OR

- 3.a) Develop an AWK program to summarize from the list of all processes, a count of processes run by every user (including root).
- b) Write about text processing utilities. [5+5]

- 4. Differentiate between the following terms:
  - a) getc( ) Vs fgetc( )
  - b) stat( ) Vs fsat( )
  - c) printf( ) Vs fprintf( )
  - d) scanf( ) Vs fscanf( ). [10]

OR

- 5.a) Explain the following system calls:
  - i) open( )
  - ii) seek( )
  - iii) read( )
  - iv) link( )
- b) Explain directory handling system calls. [5+5]

AG AG AG AG AG AG AG A

- 6.a) Differentiate between fork() and vfork().  
b) Write the syntax of six versions of exec functions and also explain how these functions differ from each other. [5+5]

OR

7. Write a c program that accepts two small numbers as arguments and then sums the two numbers in a child process. The sum should be returned by child to the parent as its exit status and the parent should print the sum? [10]

8. Write a program and explain how to transfer a large amount of data between two processes using Message queues. [10]

OR

9. Explain the following concepts about pipes:  
a) Pipes between two process  
b) Pipes among three process in a shell. [5+5]

10. Explain with a program how to copy file data from server to client using shared memory. [10]

OR

11.a) Explain briefly about the following socket APIs with clear syntax:  
i) socket() ii) bind() iii) listen() iv) accept() v) connect().  
b) Compare various IPC mechanisms. [5+5]

---ooOoo---

AG AG AG AG AG AG AG A

AG AG AG AG AG AG AG A

AG AG AG AG AG AG AG A

AG AG AG AG AG AG AG A