R15

Code No: 824AB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MCA IV Semester Examinations, December - 2019
LINUX PROGRAMMING

Time: 3hrs **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

5 × 5 Marks = 25

1.a) Explain the system commands in awk. [5]
b) Explain the support given by the kernel for files in detail. [5]
c) Discuss in detail about process creation mechanism. [5]
d) Describe the API provided by Linux for semaphores. [5]
e) Explain the usage of socket using client-server message handling example. [5]

PART - B

5 × 10 Marks = 50

2.a) List and explain various meta characters available in shell programming.
b) Write an awk script to perform simple arithmetic operations. [5+5]

OR

3.a) Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.
b) With an example script explain the differences between 'for' and 'for-each' Statement. [5+5]

4.a) Write the syntax of the following system calls and explain with an example code.
i) telldir ii) mkdir
b) What do you mean by a hole in a file? How does the use of lseek() result in hole in a file? Explain with an example program. [5+5]

OR

5. Discuss in detail about file ownership commands. [10]

6.a) 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.
b) Differentiate between reliable and unreliable signals. [5+5]

OR

7.a) Describe the following functions.
i) kill ii) raise iii) alarm iv) pause
b) What is orphan process? Write a program to illustrate the orphan process. [5+5]

8.a) Define unnamed pipe. How do we create unnamed pipe? Explain the limitations of unnamed pipe.

b) Describe the operations of semop() with a sample C program. [5+5]

OR

9.a) Describe various APIs used to implement client/server communication between two unrelated processes in a system using FIFOs with an illustrative example code.

b) Explain in detail about kernel support for semaphores. [5+5]

10.a) Explain briefly about the following socket APIs with clear syntax.
i) accept() ii) connect()

b) Describe socket system calls used for connectionless protocol with syntax and usage. [5+5]

OR

11.a) Explain Socket address structures based on Unix domain and Internet domain.

b) Explain briefly about the following Sockets APIs with clear syntax.
i) Socket() ii) bind() [5+5]

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