**UNIT-1- Linux Utilities**

1.a) Discuss the significance of filters and identify some filter commands of your choice. Explain them briefly.

b)Compare the features of stream editor with line editor

c)Write a short note on du and df utilities. [15]

2. Discuss about various file handling utilities available in LINUX. Qoute various options and examples for each. [15]

3. (a) Write in detail on the file name expansion features provided in bash with examples.

(b) Write in detail on the here documents feature provided in bash with examples.

(c) Write briefly on sed, chmod, df, comm, fgrep and sort commands with examples. **[15]**

**4.** a) Write a sed script to print all the lines of a file that is passed as command line argument by changing the string madras with Chennai.

 b) Write an awk program to print the fields 1 and 4 of a file that is passed as command line argument. The file contains lines of information that is separated by “,” as delimeter. The awk program must print at the end the average of all 4th field data.

c) Write briefly on sed,chmod,df,comm.,fgrep and sort commands with examples [4 + 5 +6]

5. .a) Write about disk utilities. (Give syntax and examples).

b) Write a shell script to count the number of lines in a file that do not contain vowels.

c) Explain filters in Linux. [15]

6. Explain the following commands with syntax, options and examples:

(a) head

(b) tail

(c) more

(d) pg. [15]

7.a) Give the reason why Linux commands are divided into internal and external commands.

b) Consider the marks.txt is a file that contains one record per line( comma separate fields) of the student data in the form of studentid, student name, Telugu marks, English marks, Maths Marks, Science marks, Social Marks. Write an awk script to generate result for every students in the form of studentid, studentname, Total Marks and result. Result is PASS if marks is >=30 in TELUGU and English, and if marks>=40 in other subjects. Result is fail otherwise.

c)Explain the significance of single quote and double quotes.

d)write in detail on the features of expr command.

8. (a) Explain the di\_erences between a line editor and a stream editor.

(b) Write a short note on the following commands:

i. ls

ii. ln

iii. mv

iv. cp. [3+12]

9Explain the following commands with examples:

(a) Creating a Directory

(b) Copying a \_le from one directory to another

(c) Moving the \_les between Directories

(d) Deleting a Directory and a File. [15]

10(a) Differentiate between a process, a program and a job.

(b) Explain various job control commands and their options with examples.

(c) What is the command used to bring a background job into the foreground job? [5+5+5]

11. Briey explain the purpose of the following utilities:

(a) grep

(b) comm.

(c) tee

(d) awk.

12. Write short notes on the following utilities:

(a) ps

(b) telnet

(c) finger

(d) ulimit.

**UNIT-2 BASH Shell**

1 a)Explain various conditional structures supported by shell with programming examples.

b)Devise a shell that lists all file in the home directory without using ls command

2 (a) Explain how debugging can be done in a shell script.

(b) Write a shell script to print the details of the user login information. [7+8]

3. a) Explain various meta characters in shell with an example script.

 b) Write in detail on the features of test command

 c) Write a shell script that displays a list of all the files in the current directory to which the user has read, write and execute permissions. [6 +4+4]

4 (a) Write in detail on how debugging can be done in running shell scripts.

(b) Write briefly on case control structure in bash with examples. Write briefly on “||” operator in bash

(c) Write in detail on the feature of test command. **[15]**

**5** a) Write about shell meta characters.

b) Write a shell script (small calculator) that adds, subtracts, multiplies and divides

the given two integers. There are two division options: one returns the quotient

and the other returns reminder. The script requires 3 arguments: The operation to

be used and two integer numbers. The options are add (-a), subtract (-s),

multiply (-m), quotient (-c) and reminder (-r).

c) What are the responsibilities of a shell? [15]

6. (a) Differentiate between di\_erent types of shells available in UNIX.

(b) Write a shell script to implement background process that will continually

print current time in upper right corner of the screen, while user can do his/her

normal job at prompt. [7+8]

7. (a) Explain the significance of single quote and double quote.

(b) What does the shell do with the meta characters if it finds in the command line?

(c) Write a shell script to find the factorial of a number. [4+4+7]

**UNIT-3 Files**

1. a) Differentiate soft links and hard links.

b) Write a C program that makes a copy of a file using standard I/O and system calls. [15]

2. a)Explain the following system calls with an example.

 i) read( ) ii) write( ) iii) stat( ) iv) open( ) [4 x 2=8]

 b)Write a C program to implement **cp** command [ 7 ]\

3 (a) Discuss the data structures that support the unix files in detail.

(b) How a file can be described in Unix environment? List and explain about the

various types of files in Unix. [7+8]

4 (a) Differentiate between the three stat functions with examples.

(b) Write a program to print the type of a file for each command line argument. [7+8]

5. Write a c program to implement ls command

6 Write a c program to implement ls –l command

7a) Discuss various status flags and file modes associated with an open system call

 b) Differentiate library functions and system calls

8 Explain Directory API

9. (a) Differentiate between advisory locking and mandatory locking.

(b) Explain the following system calls related to linking link( ), unlink( ) and symlink( ). [7+8]