

# Metropolitan University, Sylhet

Department of Computer Science & Engineering

Term Lab Final Examination - Autumn 2021

**Program:** Bachelor of Science in CSE (Fourth Year Second & First Term), **Batch:** 45, 46

**Course:** CSE 322:: Operating System Lab

**Time: 40 mins**

**Total Marks: 40**

All parts of each question must be answered sequentially.  
Figures in the right margin indicate full marks.

Answer any **Thirteen** questions

3 × 13 = 39

1. Define `cat`. Does it have any similarity with `more`, or `less`? Can you use these keywords for multiple files?
2. What is the full meaning of `cd`? What command will be used to go back to the previous directory from the current directory? If you want to go to the root directory of your operating system, then which command should be used?
3. Suppose you want to copy a file named `source.txt` from `/OS` to `/SUST`. Now, write down the command? Write down the command if you want to use the `-t` option. (use absolute path)
4. Define `PID`, `TTY`, `BSD`, `CMD`.  
PID = Process ID, BSD = Berkeley Software Distribution, CMD = Commands, TTY - The name of the controlling terminal for the process
5. Define `ls`. What does `ls -lah` command do? If you want to see all folders or files (in detail) recursively inside a directory, then what command should be used?
6. Can `touch` create a file named `pub.get`?  
What does `rm -rf` do? Describe `-rf` options.
7. Suppose you open a text file using `less` command on the terminal. If want to search a string on that file, how will you do that?  
What keyword can exit `less`? Write down the two modes of `vim`. How can we switch between these modes?
8. `time` command prints `real`, `user`, `sys` time. What do you understand by these terms?  
What does `kill -9 -1` command do?
9. If you want to print only these lines containing `'touch'` word from your whole `history` of commands, then what command do you use? (use pipe command)  
What does `pwd` do? What command can `reboot` the operating system?
10. Illustrate the following line.  
`-rw-r--r-- 1 eesha students 1389 Mar 31 17:26 helloWorld.txt`
11. Write down three users as well as three access modes of a file or directory in Linux/Unix?  
If you want to change the mode of files or directories recursively, what command should be used? (Provide owner all privileges, and the others only Execution privilege)
12. What does `chown` do? Illustrate.  
What does `sudo chown -R root: DirectoryName` do? If you don't use `sudo`, what will happen?
13. Define `sed`.  
What command should be used to replace all `'hello'` words with `'world'` within `source.txt`? Please use the absolute path.
14. What does `awk` do? Illustrate.  
awk stands for "Aho, Weinberger, and Kernighan".  
awk is an interpreted programming language which focuses on processing text.  
Write a program named `prog.awk` which can print only these lines that are longer than 3 characters. Now use `awk` as well as `prog.awk` for `source.txt`.  
Inside `prog.awk` -  
`length($0) > 3`  
`$ awk -f prog.awk /Home/Documents/OS/source.txt`
15. Write a shell script that accepts one or more file name(s) as arguments and converts all of them to uppercase, provided they exist in the current directory.
16. Write a shell script to perform the following string operations:
  - a. To extract a sub-string from a given string
  - b. To find the length of a given string