# Operating Systems Lab Questions

1. Execute `pwd` command and explain `ls` command with various options.

2. Write a C program to perform inter-process communication between parent and child by using `fork()` system call.

3. Create Directory in Linux and explain remove directory command with files inside.

4. Write a shell script to list only the name of sub-directories in the present working directory.

5. Write a shell script to find whether a given number is odd or even.

6. Write a program to print the Child process ID and Parent process ID in both Child and Parent processes.

7. Display the date and time in Linux and explain `man` and `help` commands.

8. Write a program to check all the files in the present working directory for a pattern (passed through command line) and display the name of the file followed by a message stating that the pattern is available or not available.

9. Execute `cp` command and move multiple files to destination directory.

10. Write a program that creates two threads: one to increment the value of a shared variable and another to decrement the value of the shared variable, using a semaphore to ensure only one thread executes in its critical section.

11. Execute `locate` command and explain `echo` command with example.

12. Write a C program to create a new process and ensure that the parent process waits for the child process to terminate.

13. Write a shell script to get input values into an array and display it.

14. Write a C program demonstrating overlay concept by passing through command line argument using `fork()` system call.

15. Write a shell script to find greatest of three numbers.

16. Write a program to print the Child process ID and Parent process ID in both Child and Parent processes.

17. Write a shell script to find summation of series.

18. Write a program demonstrating process synchronization using semaphore.

19. Write a shell script program to print elements using For Loop.

20. Write a program to print the Child process ID and Parent process ID in both Child and Parent processes.

21. Execute `chmod`, `cat`, `mv`, `zip` and `unzip` command.

22. Write a shell script to swap two numbers using temporary variable.

23. Execute `ping`, `grep`, `cat`, `cp` and `hostname` command.

24. Write a shell script to check whether the given input is in the increasing order or not.

25. Write a shell script to sort the elements in ascending order.

26. Write a C program to implement message queues using IPC.

27. Write a shell script to search for a given element from array.

28. Write a C program demonstrating use of `fork()`, `wait()`, `sleep()`, and `exit()` system calls.

29. Write a shell script to find the sum of every two consecutive numbers in the given array.

30. Write a Program to Create 2 child processes, make the parent wait for both the child processes to complete.

31. Write a shell script to find the difference of every two consecutive numbers in the given array.

32. Write a program demonstrating dynamic binding using `pthread` library.