# SAVITIBAI PHULE UNIVERSITY
## M.Sc.(Computer Science) Sem-I
### Practical Examination (From 2023-2024)
### SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

**Time: 3 Hours**                                                         **Max. Marks: 35**

_____

**Q.1)** Take multiple files as Command Line Arguments and print their inode numbers and file types

**[10 Marks ]**

**Q.2)** Write a C program to send SIGALRM signal by child process to parent process and parent process make a provision to catch the signal and display alarm is fired.(Use Kill, fork, signal and sleep system call)                    [**20 Marks ]**

**Q.3)** Viva                                                            **[ 5 Marks ]**

------------------------ Slip 1 --------------------

**Time: 3 Hours**             **Max. Marks: 35**

_____

**Q.1)** Write a C program to find file properties such as inode number, number of hard link, File permissions, File size, File access and modification time and so on of a given file using stat() system call.          **[10 Marks ]**

**Q.2)** Write a C program that catches the ctrl-c (SIGINT) signal for the first time and display the appropriate message and exits on pressing ctrl-c again.          [**20 Marks ]**

**Q.3)** Viva          **[ 5 Marks ]**

------------------------ Slip 2 --------------------

# SAVITIBAI PHULE UNIVERSITY
## M.Sc.(Computer Science) Sem-I
### Practical Examination (From 2023-2024)
### SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

**Time: 3 Hours**                                                         **Max. Marks: 35**

_____

**Q.1)**   Print the type of file and inode number where file name accepted through Command Line

**[10 Marks ]**

**Q.2)**   Write a C program which creates a child process to run linux/ unix command or any user defined program. The parent process set the signal handler for death of child signal and Alarm signal. If a child process does not complete its execution in 5 second then parent process kills child process.

[**20 Marks ]**

**Q.3)** Viva                                                                  **[ 5 Marks ]**

**Time: 3 Hours**                                                                 **Max. Marks: 35**

_____

**Q.1)** Write a C program to find whether a given files passed through command line arguments are present in current directory or not.

**[10 Marks ]**

**Q.2)** Write a C program which creates a child process and child process catches a signal SIGHUP, SIGINT and SIGQUIT. The Parent process send a SIGHUP or SIGINT signal after every 3 seconds, at the end of 15 second parent send SIGQUIT signal to child and child terminates by displaying message "My Papa has Killed me!!!".

[**20 Marks ]**

**Q.3)** Viva                                                                     **[ 5 Marks ]**

**Time: 3 Hours**                                                                  **Max. Marks: 35**

_____

**Q.1)** Read the current directory and display the name of the files, no of files in current directory

**[10 Marks ]**

**Q.2)** Write a C program to create an unnamed pipe. The child process will write following three messages to pipe and parent process display it.

Message1 = "Hello World"

Message2 = "Hello SPPU"

Message3 = "Linux is Funny"                                                   [**20 Marks ]**

**Q.3)** Viva                                                                       **[ 5 Marks ]**

# SAVITIBAI PHULE UNIVERSITY
## M.Sc.(Computer Science) Sem-I
### Practical Examination (From 2023-2024)
### SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

**Time: 3 Hours**                                                    **Max. Marks: 35**

_____

**Q.1)** Display all the files from current directory which are created in particular month

**[10 Marks ]**

**Q.2)** Write a C program to create n child processes. When all  n child processes terminates, Display total cumulative time children spent in user and kernel mode

[**20 Marks ]**

**Q.3)** Viva                                                       **[ 5 Marks ]**

------------------------ Slip 6 --------------------

**Time: 3 Hours**          **Max. Marks: 35**

_____

**Q.1)** Write a C Program that demonstrates redirection of standard output to a file

**[10 Marks ]**

**Q.2)** Implement the following unix/linux command (use fork, pipe and exec system call)

ls –l | wc –l          [**20 Marks ]**

**Q.3)** Viva          **[ 5 Marks ]**

**Time: 3 Hours**                                                                       **Max. Marks: 35**

_____

**Q.1)** Write a C program that redirects standard output to a file output.txt. (use of dup and open system call).                                                                       **[10 Marks ]**

**Q.2)** Implement the following unix/linux command (use fork, pipe and exec system call)
ls –l | wc –l.

[**20 Marks ]**

**Q.3)** Viva                                                                       **[ 5 Marks ]**

------------------------ Slip 8 --------------------

**Time: 3 Hours**                                                          **Max. Marks: 35**

_____

**Q.1)** Generate parent process to write unnamed pipe and will read from it

**[10 Marks ]**

**Q.2)** Write a C program to Identify the type (Directory, character device, Block device, Regular file, FIFO or pipe, symbolic link or socket) of given file using stat() system call.

[**20 Marks ]**

**Q.3)** Viva                                                          **[ 5 Marks ]**

**Time: 3 Hours**                                                                 **Max. Marks: 35**

_____

**Q.1)** Write a program that illustrates how to execute two commands concurrently with a pipe.

**[10 Marks ]**

**Q.2)** Generate parent process to write unnamed pipe and will write into it. Also generate child process which will read from pipe

[**20 Marks ]**

**Q.3)** Viva                                                                            **[ 5 Marks ]**

**Time: 3 Hours**                                                                          **Max. Marks: 35**
_____

**Q.1)** Write a C program to get and set the resource limits such as files, memory associated with a process                                                                                         **[10 Marks ]**

**Q.2)** Write a C program that redirects standard output to a file output.txt. (use of dup and open system call).                                                                                     [**20 Marks ]**

**Q.3)** Viva                                                                                                      **[ 5 Marks ]**

**Time: 3 Hours**                                                               **Max. Marks: 35**

_____

**Q.1)** Write a C program that print the exit status of a terminated child process

**[10 Marks ]**


**Q.2)** Write a C program which receives file names as command line arguments and display those filenames in ascending order according to their sizes. I) (e.g $ a.out a.txt b.txt c.txt, …)

[**20 Marks ]**


**Q.3)** Viva                                                                   **[ 5 Marks ]**

# SAVITIBAI PHULE UNIVERSITY
## M.Sc.(Computer Science) Sem-I
### Practical Examination (From 2023-2024)
### SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

**Time: 3 Hours**                                               **Max. Marks: 35**

_____

**Q.1)** Write a C program that illustrates suspending and resuming processes using signals

**[10 Marks ]**

**Q.2)** Write a C program that a string as an argument and return all the files that begins with that name in the current directory. For example > ./a.out foo will return all file names that begins with foo

[**20 Marks ]**

**Q.3)** Viva                                                    **[ 5 Marks ]**

# SAVITIBAI PHULE UNIVERSITY
## M.Sc.(Computer Science) Sem-I
### Practical Examination (From 2023-2024)
### SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

**Time: 3 Hours**                                                    **Max. Marks: 35**

_____

**Q.1)** Display all the files from current directory whose size is greater that n Bytes Where n is accept from user.                                                                **[10 Marks ]**

**Q.2)** Write a C program to find file properties such as inode number, number of hard link, File permissions, File size, File access and modification time and so on of a given file using stat() system call.                                                             [**20 Marks ]**

**Q.3)** Viva                                                                                       **[ 5 Marks ]**

**Time: 3 Hours**                                                                 **Max. Marks: 35**

_____

**Q.1)** Display all the files from current directory whose size is greater that n Bytes Where n is accept from user                                                                                **[10 Marks ]**

**Q.2)** Write a C program which creates a child process to run linux/ unix command or any user defined program. The parent process set the signal handler for death of child signal and Alarm signal. If a child process does not complete its execution in 5 second then parent process kills child process

[**20 Marks ]**

**Q.3)** Viva                                                                                          **[ 5 Marks ]**

------------------------ Slip 15 --------------------

# SAVITIBAI PHULE UNIVERSITY
## M.Sc.(Computer Science) Sem-I
### Practical Examination (From 2023-2024)
### SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

**Time: 3 Hours**                                                      **Max. Marks: 35**

_____

**Q.1)** Display all the files from current directory which are created in particular month

**[10 Marks ]**

**Q.2)** Write a C program which create a child process which catch a signal sighup, sigint and sigquit. The Parent process send a sighup or sigint signal after every 3 seconds, at the end of 30 second parent send sigquit signal to child and child terminates my displaying message "My DADDY has Killed me!!!".                 **[20 Marks ]**

**Q.3)** Viva                                                         **[ 5 Marks ]**

**Time: 3 Hours**                                             **Max. Marks: 35**

_____

**Q.1)** Read the current directory and display the name of the files, no of files in current directory

**[10 Marks ]**

**Q.2)** Write a C program to implement the following unix/linux command (use fork, pipe and exec system call). Your program should block the signal Ctrl-C and Ctrl-\ signal during the execution.

i. Ls –l | wc –l                                **[20 Marks ]**

**Q.3)** Viva                                                  **[ 5 Marks ]**

**Time: 3 Hours**                                                         **Max. Marks: 35**

_____

**Q.1)** Write a C program to find whether a given file is present in current directory or not

**[10 Marks ]**

**Q.2)** Write a C program to create an unnamed pipe. The child process will write following three messages to pipe and parent process display it.

Message1 = "Hello World"

Message2 = "Hello SPPU"

Message3 = "Linux is Funny"                                    [**20 Marks ]**

**Q.3)** Viva                                                              **[ 5 Marks ]**

**Time: 3 Hours**             **Max. Marks: 35**

_____

**Q.1)** Take multiple files as Command Line Arguments and print their file type and inode number

**[10 Marks ]**

**Q.2)** Implement the following unix/linux command (use fork, pipe and exec system call)

ls –l | wc –l          [**20 Marks ]**

**Q.3)** Viva          **[ 5 Marks ]**

# SAVITIBAI PHULE UNIVERSITY
## M.Sc.(Computer Science) Sem-I
### Practical Examination (From 2023-2024)
### SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

**Time: 3 Hours**                                                                     **Max. Marks: 35**

_____

**Q.1)** Write a C program that illustrates suspending and resuming processes using signals

**[10 Marks ]**

**Q.2)** Write a C program to Identify the type (Directory, character device, Block device, Regular file, FIFO or pipe, symbolic link or socket) of given file using stat() system call.

[**20 Marks ]**

**Q.3)** Viva                                                                     **[ 5 Marks ]**

**Time: 3 Hours**                                                        **Max. Marks: 35**

_____

**Q.1)** Read the current directory and display the name of the files, no of files in current directory

**[10 Marks ]**

**Q.2)** Write a C program which receives file names as command line arguments and display those filenames in ascending order according to their sizes. I) (e.g $ a.out a.txt b.txt c.txt, …)

[**20 Marks ]**

**Q.3)** Viva                                                        **[ 5 Marks ]**

# SAVITIBAI PHULE UNIVERSITY
## M.Sc.(Computer Science) Sem-I
### Practical Examination (From 2023-2024)
### SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

**Time: 3 Hours**                                                                 **Max. Marks: 35**

_____

**Q.1)** Write a C Program that demonstrates redirection of standard output to a file

**[10 Marks ]**

**Q.2)** Write a C program to implement the following unix/linux command (use fork, pipe and exec system call). Your program should block the signal Ctrl-C and Ctrl-\ signal during the execution.

i. ls –l | wc –l

[**20 Marks ]**

**Q.3)** Viva                                                                              **[ 5 Marks ]**

**Time: 3 Hours**                                                                        **Max. Marks: 35**

_____

**Q.1)** Write a C program to find whether a given file is present in current directory or not

**[10 Marks ]**

**Q.2)** Write a C program to Identify the type (Directory, character device, Block device, Regular file, FIFO or pipe, symbolic link or socket) of given file using stat() system call.

[**20 Marks ]**

**Q.3)** Viva                                                                        **[ 5 Marks ]**

# SAVITIBAI PHULE UNIVERSITY
## M.Sc.(Computer Science) Sem-I
### Practical Examination (From 2023-2024)
### SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

**Time: 3 Hours**                                                          **Max. Marks: 35**

_____

**Q.1)** Print the type of file and inode number where file name accepted through Command Line

**[10 Marks ]**

**Q.2)** Write a C program which creates a child process to run linux/ unix command or any user defined program. The parent process set the signal handler for death of child signal and Alarm signal. If a child process does not complete its execution in 5 second then parent process kills child process

[**20 Marks ]**

**Q.3)** Viva                                                          **[ 5 Marks ]**

# SAVITIBAI PHULE UNIVERSITY
## M.Sc.(Computer Science) Sem-I
### Practical Examination (From 2023-2024)
### SUBJECT: CS-504-MJP: Lab Course on CS-501-MJ (Advanced Operating System)

**Time: 3 Hours**                                          **Max. Marks: 35**

_____

**Q.1)** Write a C Program that demonstrates redirection of standard output to a file

**[10 Marks ]**

**Q.2)** Write a C program that redirects standard output to a file output.txt. (use of dup and open system call).

[**20 Marks ]**

**Q.3)** Viva                                          **[ 5 Marks ]**