

LINUX PROGRAMMING

UNIT-I

PART A

1. Explain the command used to copy a file from one directory to another with example.
2. Explain head and tail command with example
3. What is a shell?
4. What is the use of Finger command?
5. Explain the use of cmp command
6. Explain the use of chown command with example
7. Explain null (;) command
8. What is the use of set command?
9. Explain the use of eval command with example
10. What is the use of tee command?
11. List out the I/O redirection operators?
12. What are positional parameters?
13. What are quoting metacharacters?

PART B

1. Explain backup utilities (tar, cpio)
2. Explain the network related commands. (telnet, rlogin, ftp, arp)
3. Briefly explain the purpose of the following utilities:
 - (a) grep
 - (b) comm
4. Explain the file permissions in detail.
5. Explain the following commands with syntax, options and examples
 - a) Pg
 - b) More
6. Explain briefly about text processing and process utilities.
7. Write a short note on awk command .
8. Explain about sed.
9. Discuss the commands used to archive files and compress the contents of files in detail
10. Write a short note on I/O Redirection operators.
11. Explain the significance of single quote and double quote.
12. What is command substitution? What is the token used with command substitution?
13. Explain various meta characters in shell with an example script
14. Write a short notes on here documents.
15. Differentiate between shell variables and environment variables and user defined variables.

UNIT-II

PART A

1. What is a file?
2. What is a inode?
3. What is Symbolic link file?
4. What is a file descriptor?
5. What is the use of O_EXCL flag in open () function?
6. Write the prototype for link () and unlink () function?
7. What is a process?
8. What is the use of fork () system call?
9. Write the syntax for waitpid () system call?
10. What is orphan process and zombie process?

PART B

1. Differentiate between advisory locking and mandatory locking
2. What is file mode creation mask? Explain how to set it for a process. What happens if the file mode creation mask is set to 777(Octal) value?
3. Explain dup() and its importance.
4. Write about File and Directory maintenance system calls?
5. Explain about the following system calls:
a) open() b) seek() c) read() d) link().
6. Explain how the fcntl () system call is used for changing the properties of a file.
7. Explain the following system calls with an example.
a) Creat () b) write () c) stat () d) fcntl ()
8. Explain the following system calls related to linking link (), unlink () and symlink ().
9. Explain how the fcntl () system call is used for changing the properties of a file.

UNIT-III

PART A

1. What is a file?
2. What is a inode?
3. What is a block device file?
4. What is Symbolic link file?
5. Write the protopype for fgets() function
6. What is the job of clearerr () function?
7. What is a file descriptor?
8. What is the use of O_EXCL flag in open () function?
9. Write the prototype for link () function?

10. What is the use of unlink () function?

PART B

1. Differentiate between wait() and waitpid()
2. Explain signal function() with an example
3. Differentiate between fork() and vfork()
4. Explain exec() function with example
5. Define Signals. What do you mean by Unreliable Signals? Explain
6. Explain the following functions with syntax and example
7. a)abort() b)sleep()
8. write a program to implement orphan process
9. write a program to implement Zombie process

UNIT-IV

PART A

11. What is interprocess communication?
12. Differentiate related processes and unrelated processes?
13. Write the prototype for msgget () function?
14. Write the prototype for msgsnd () function?
15. Write the prototype for msgrcv () function?
16. Which function is used to retrieve the control information of the message queue ?
17. What are the three types of IPC?
18. What is the use of a pipe?
19. What is a semaphore?
20. What does the system limit SEMMSL indicates?

PART B

1. Explain about the kernel data structure for message queues
2. Explain about the effect of O-NDELAY flag on pipes and fifos.
3. Explain the advantages of fifos over pipes.
4. What are the drawbacks of System V IPC mechanisms?
5. Illustrate mkfifo () system call with an example
6. What is message queue explain with example?
7. What is FIFO explain with example?
8. Elaborately discuss various forms of IPC supported by Unix.
9. What are pipes? Explain their limitations. Explain how pipes are created and used in IPC with an examples.
10. *Compare the IPC functionality provided by pipes and message queues*
11. Explain various APIs available in POSIX.1b for increasing and decreasing a semaphore value with an exampleList and explain various system calls associated with semaphores
12. Explain various API's for locking a file with semaphores

UNIT-V

PART A

1. What is a shared memory?
2. What is the use of shmat () function?
3. Write the syntax for shmctl () function?
4. What does IPC_PRIVATE indicates as key value in shmget () function?
5. What does the SHM_UNLOCK command value in shmdt () indicate?
6. What are the system limits in shared memory?
7. Write the syntax for semop () function?
8. What is a socket?
9. How can a socket be addressed?
10. What is connection based service and connection less service?

PART B

1. Explain how to attach and detach a shared-memory segment
2. Explain kernel support for shared memory with a neat diagram
3. Explain how to control a shared-memory segment
4. List and explain various system calls associated with shared memory
5. What is socket? Explain various socket system calls used for UDP protocol.
6. Explain socket system calls for connection oriented protocol.
7. Briefly discuss about socket options
8. What are linux sockets?
9. write about connection oriented and connection less protocols
10. Write a program to illustrate bind (), listen () and accept () system calls.