VIDYA JYOTHI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

LINUX PROGRAMMING -- QUESTION BANK

Unit : I

Long Answers Type Questions : (5 questions)

1. a)Explain in detail about Linux Operating system structure.
   b) Explain file handling utilities?
2. Write in detail about five Text Processing Utilities.
3. Explain about process utilities?
4. a) Explain various patterns and actions in awk.
   b) Write an awk script to perform simple arithmetic operations
5. Explain the commands in sed.

Short Answers Type Questions : (20 qsns)

1. What is Linux?
2. What is kernel and explain its functions?
3. Explain security by file permissions?
4. Explain any three process utilities?
5. Write the syntax with example for the following commands

a) chmod b) tr c) tar

6. Explain about any three filters?
7. Explain disk utilities?
8. Write differences between sed and awk?
9. Explain the networking commands?
10. Explain about SED Addresses with example?
11. Explain about AWK command and patterns in AWK?
12. Write the syntax with example for the following commands
    a) grep b) sort c) telnet
13. Explain about head and tail command?
14. Write short notes on SED command?
15. Explain about comparing commands? (comm, diff, cmp)
16. Explain backup utilities *(tar, cpio)*?
17. Differentiate between a process, a program and a job?
18. Write a short note on buffers in AWK?
19. What is the difference between append and insert command in SED?
20. Define filter?

Unit : II

Long Answers Type Questions : (5 questions)

1. Define Shell? Responsibilities of Shell?
2. Write about the types of shells? Explain the shell commands?
3. write about control statements with syntaxes?
4. Write a shell script to count the specified number of lines in a text file without using wc command?
5. a)With an example script explain the differences between ‘while’ and ‘until’ statements.
   b) List and explain the various meta characters available in shell programming.

Short Answers Type Questions : (20 qsns)

1. What is shell?
2. Types of shells?
3. Write short notes on I/O redirection operators?

4. Define the here document with example?
5. Write about Responsibilities of Shell?
6. Write a shell script for arithmetic operations using case statement?
7. Write a shell script to find the reverse of the number?
8. Describe about various shell variables?
9. What is Test Command?
10. Write a shell script to find the factorial of a given number?
11. Define function? Write a list of predefined functions?
12. Write about the types of shells? and Meta characters in shell?
13. Write a shell script to find file or directory?
14. Describe about control statements with syntaxes?
15. Explain various Meta characters in shell with an example script?
16. Write a shell script to illustrate cat command in Linux?
17. Explain how debugging can be done in a shell script?
18. What is command substitution?
19. Write a shell script to find and delete all file with the word “Unix"?
20. Write a short notes on interrupt processing ?

Unit : III

Long Answers Type Questions : (5 questions)

1. Explain about file system structure in Linux.
2. Explain the following system calls with syntax:
   (i)lseek() (ii) read() (iii)open () (iv) creat()
3. Explain about hard and symbolic links with examples
4. Discuss the data structures that support the linux files in detail?
5. a)Explain about scanning directories functions.
   b)Write a c program to implement **ls command** by using system calls?

Short Answers Type Questions : (20 qsns)

1. List the standard I/O functions?
2. Define file descriptor.
3. What is i-node?
3. Difference between stream pointer and file descriptor?
4. What is system call?
5. List the scanning directories functions?
6. List the system calls for Directories ?
7. What is Symbolic link?
8. What is hard link?
9. Define file? Write the types of files?
10. Write a program to implement cp command using system call?
11. Write a program to implement mv command using system calls?
12. What are file attributes?
13. write a program to implement cat command using system calls?
14. What is the command used for changing the directory?
15. what is meant by reference counter?
16. Explain the following system calls with syntax;
    (a)mkdir() (b)rmdir()
17. Explain the following system calls with syntax. (a)chdir() (b) closedir()

18. What is links with examples?
19. Explain in detail about various files.
20. Write a program to explain link system call

Unit : IV

Long Answers Type Questions : (5 questions)

1. What is meant by Process? Explain the following with example:
(a) Process Creation
(b) Process Termination
2. What is an orphan process? Write a program to illustrate orphan process.
3. What is an Zombie process? Write a program to illustrate Zombie process.
4. a) Difference between fork() and vfork()?
b)Difference between reliable and unreliable signals
5. Explain the below system calls with the help of syntax and examples:
a) kill b) raise c) alarm d) pause e) abort

Short Answers Type Questions : (20 qsns)

1. What is meant by Process?
2. What is Process Creation?
3. What is Process Termination?
4. Differentiate between real IDs and effective IDs?
5. What is an orphan process?
6. What is an Zombie process?
7. Differentiate between thread and process?
8. Explain the following system calls for signals
   a) kill() b) raise()
9. Explain the following system calls for signals
   c) alarm() d) abort()
10. Explain about the kernel support for signals.
11. What is signal handler? explain with an example.
12. What are the signals that are not ignored or blocked?
13. What is need of exec( ) system call? Write syntax?
14. Differentiate between fork( ) and vfork( ).
15. Explain about the kernel support for processes.
16. What is signal function?
17. What are process identifiers? Mention the commands for getting different IDs of calling process.
18. Write a program that demonstrates the use of exit( ).
19. difference between wait() and waitpid()?
20. difference between signal and interrupt?

Unit : V

Long Answers Type Questions : (5 questions)

1. Define unnamed pipe? How do we create unnamed pipe? Explain the limitations of unnamed pipe.
2.Define named pipe? How do we create named pipe?Write c programs that illustrate communication between two unrelated processes using named pipe?
3. Describe various APIs of Shared memory that are used for inter process communication.
4. Describe various APIs of Message queues that are used for inter process communication.

5. a) Explain briefly about the following socket APIs with clear syntax:
i) socket( ) ii) bind( ) iii) listen( )
b) Describe Socket system calls used for connectionless protocol with syntax and usage.

Short Answers Type Questions : (20 qsns)

1. What is IPC?
2. What are IPC Between processes on a single user system?
3. What is socket? How to create a socket?
4. What is pipe? How to create a pipe?
5. What is shared memory?
6. What is FIFO explain with example?
7. Compare the IPC mechanisms?
8. Explain with example the Kernel Support for message queues?
9. How to create message queues?
10. What is msgsend and msgrecv system calls?
11.List the API for Shared memory?
12. Explain with example the Kernel Support for semaphore?
13. Difference between connection oriented and connection less protocols?
14. Write the syntax for semop(), semget(), semcntl() system calls?
15. How to control semaphore?
16. What is semaphore? Types of semaphore?
17. what are the connection less socket methods ?
18. What is generic socket address structure?
19. Differentiate between pipe( ) and FIFO.
20. What is IPv4 and IPv6 socket address structure?