VIT UNIVERSITY
(Estd. u/s 3 of UGC Act 1956)

School of Computer Science and Engineering

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Course Code : CSE 2005
Course Name : Operating Systems- Lab (ELA)

List of Experiments and Exercise Sheet

1. Study of basic Linux commands.
2. Write a shell script to find the sum of first 'N' numbers in Fibonacci series (use for loop)
3. Write a shell script to print a given number in reverse order and sum of the individual digits.
4. Write a shell script to accept one integer argument and print its multiplication table.
5. Write a Shell Script that makes use of grep to isolate the line in /etc/passwd that contains your login details.
6. Using shell script, display the contents of the present working directory. If it is an ordinary file print its permission and change the permissions to r--r--r--.
7. Write a C program to kill a process by specifying its name rather than its PID.

8. Create a file with few lines, Write a C program to read the file and delete the spaces more than one in the file (use UNIX file API's).
9. Write a program a. To create parent & child process and print their id. b. To create a zombie process. c. To create orphan process.
10. Write a program a. To make the process to sleep for few seconds. b. To create a background process.
11. Implement the program to pass messages using pipes.
12. Write a program to demonstrate the implementation of Inter Process Communication (IPC) using shared memory.
13. Write a program to create a thread and let the thread check whether the given number is prime or not.
14. Design the following CPU Scheduling Algorithms to provide the performance analysis among them. a. FCFS b. PRIORITY c. ROUND ROBIN d. SJF
15. Write a program to provide a solution for reader- writer problem / producer consumer using semaphore.
16. Implement a solution for the classical synchronization problem: Dining Philosophers.
17. Write a program to avoid deadlock using Banker's algorithm.(Safety algorithm)
18. Implement a program to allocate memory by applying the following strategies. a. FIRST FIT b. BEST FIT c. WORST FIT
19. Implement a program for page replacement using the following a. FIFO b. LRU c. OPTIMAL
20. Implement a) Binary Semaphore b) Counting Semaphore.
21. In the Cigarette-Smokers Problem, Consider a system with three smoker processes and one agent process. Each smoker continuously rolls a cigarette and then smokes it. But to roll and smoke a cigarette, the smoker needs three ingredients: tobacco, paper and matches. One of the smoker processes has paper, another has tobacco and the third has matches. The agent has an infinite supply of all three materials. The agent places two of the ingredients on the table. The smoker who has the remaining ingredient then makes and smokes a cigarette, signaling the agent on completion. The agent then puts out another

two of the three ingredients and the cycle repeats. Write a program to synchronize the agent and the smokers.
22. Simulate with a program to schedule disk in seek optimization.