R20 Regulation *Subject code: 3P3FB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech III Semester Regular/Supplementary Examinations, March/April 2023

Linux Programming

(Information Technology)

Maximum Marks: 70 Date:04.04.2023 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

1 Write about File Handling Utilities

2 What is a Shell Variable

3 Compare and contrast dup() and dup2() system calls.

4 Write the syntax of removing and creating directory.

5 Compare and contrast wait() and waitpid()

6 Write short notes on sleep function

7 Define IPC

8 Differentiate between unnamed and named pipe

9 What is a Socket

10 Explain fcntl function in socket programming

Part-B

Answer All the following questions. (5X10M=50Marks)

11 A. Explain in detail about Text Processing Utilities and Backup Utilities.
B. Write a shell script to count number of lines present in a text file? 5+5

OR

12 A. Write short notes on i) Associative Arrays ii) File handling utilities
B. Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it. 5+5

13 A. Explain in detail about file permissions and file ownership
B. Explain about the following commands 6+4
i)mkdir ii) getcwd iii) rmdir iv) chdir

OR

14 Explain briefly about directory and the various operations that can be performed on them. 10

15 A. Explain the procedures for process creation, replacing a process image, waiting for a process, process termination. 5+5
B. Define Signals. What do you mean by Unreliable Signals? Explain

OR

16 A. Write short notes on Zombie process and Orphan process.
B. Explain the below system calls with the help of syntax and examples: 5+5
i) kill ii) raise iii) alarm iv) pause v) abort

17 A. What is a pipe? Using pipe, how IPC can be implemented.
B. Describe the API provided by Linux for semaphores 5+5

OR

18 A. Discuss about Kernel support for Message Queues. 5+5
B. Write a program for locking a file using semaphore.

19 Explain in detail about the socket system calls for connection-oriented protocol and connectionless protocol. 10

OR

20 A. Write a short note on APIs for Shared Memory. 5+5
B. What is socket address structure and compare various socket address structures?