

**Time: 3 Hours****Max. Marks: 60****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 8 marks and may have a, b, c as sub questions.

**PART - A****5 × 4 Marks = 20**

- 1.a) Explain command substitution. [4]
- b) Explain the functionality of lseek() function. [4]
- c) What is the difference between wait() and waitpid(). [4]
- d) With the help of syntax explain popen() function. [4]
- e) Explain how to perform IPC between processes over a network. [4]

**PART - B****5 × 8 Marks = 40**

- 2.a) Explain various process utilities available in linux.
- b) Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it. [4+4]

**OR**

- 3.a) Develop an AWK program to summarize from the list of all processes, a count of processes run by every user (including root).
- b) Write about text processing utilities. [4+4]

4. Differentiate between the following terms:  
 a) getc() Vs fgetc()      b) stat() Vs fsat()  
 c) printf() Vs fprintf()      d) scanf() Vs fscanf(). [8]

**OR**

5. Explain the file and record locking techniques with relevant example code snippet? [8]

- 6.a) Explain the layout of a C program image in main memory.
- b) Define orphan process. Write a program to illustrate the orphan process concept. [4+4]

**OR**

7. Write a c program that accepts two small numbers as arguments and then sums the two numbers in a child process. The sum should be returned by child to the parent as its exit status and the parent should print the sum? [8]

8. Describe the API provided by linux for semaphores. [8]

**OR**

9. Write a program and explain how to transfer a large amount of data between two processes using Message queues? [8]

10. Describe Socket system calls used for connectionless protocol with syntax and usage. [8]

**OR**

11. Explain with a program how to copy file data from server to client using shared memory? [8]

