

Fifth Semester B.E. Degree Examination, Dec.2024/Jan.2025

UNIX Programming

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Describe interactive session of UNIX along with block diagram. (10 Marks)
- b. Explain any five features of UNIX operating system. (10 Marks)

OR

- 2 a. Explain with figure kernel and shell relationship in UNIX operating system. (10 Marks)
- b. Explain four special directories that play an important role in directory structure of UNIX. (10 Marks)

Module-2

- 3 a. Write a shell script which will receive any number of filenames as arguments. The shell script should check whether every argument supplied is a file or directory. If it is a directory it should be appropriately reported. If it is a file then total number of lines in that file should be displayed. (10 Marks)
- b. What are file permissions? Explain the use of chmod to change file permission using both absolute and relative methods. (10 Marks)

OR

- 4 a. Write a shell script to accept a string as command line and reverse it. (10 Marks)
- b. Explain grep command. List any three options of grep command with its significance, syntax and example. (10 Marks)

Module-3

- 5 a. Explain following API; with syntax and example.
i) open ii) close iii) read iv) write (10 Marks)
- b. What do you mean by fork(), vfork() and exec() functions? Explain them with example programs. (10 Marks)

OR

- 6 a. With a neat schematic diagram, explain the memory layout of a C program. (10 Marks)
- b. Explain jmp and longjmp API; with an example. (10 Marks)

Module-4

- 7 a. What are pipes? Explain different methods to view a half duplex pipe. Write a program to send data from parent to child process using pipes. (10 Marks)
- b. Explain briefly with example:
i) Message Queues ii) Semaphores (10 Marks)

OR

- 8 a. What is a FIFO? What are the two methods of creating FIFO? Explain with diagram client server communication using FIFO. (10 Marks)
- b. What are Interpreter files? How are they useful? Write a program that execs an interpreter file. (10 Marks)

Module-5

- 9 a. Explain the term signal and signal mask. Illustrate the same with an example. (10 Marks)
- b. What is error logging? With a neat block schematic diagram, discuss the error login facility in BSD. (10 Marks)

OR

- 10 a. Explain kill and alarm API with an example. (10 Marks)
- b. Explain daemon characteristic and coding rules. (10 Marks)
