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Fifth Semester B.E. Degree Examination, July/August 2022
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. Explain Unix architecture with neat diagram. (09 Marks)
b. Explain the salient features of Unix operating system. (07 Marks)
c. Explain the following commands : (i) date (ii) echo (04 Marks)

OR

- 2 a. Explain three categories of files in unix. (06 Marks)
b. What are internal and external commands in unix? Explain them with example. (06 Marks)
c. Explain the following commands with syntax and example, (08 Marks)
(i) cat (ii) mv (iii) wc (iv) mkdir

Module-2

- 3 a. Discuss the significance of the seven fields of `ls -l` command. (09 Marks)
b. Explain three standard file and redirection in unix. (06 Marks)
c. Explain grep command with example. (05 Marks)

OR

- 4 a. What are file permission? Illustrate the different ways of setting the file permission. (10 Marks)
b. Explain shell interpreter cycle with flowchart. (05 Marks)
c. Explain for and while control statements in shell script with example. (05 Marks)

Module-3

- 5 a. Explain the following API's with prototype (i) open (ii) `fcntl` (10 Marks)
b. Explain the fork and v-fork system call. How fork system call differs from v-fork? (10 Marks)

OR

- 6 a. With neat sketch, explain memory layout of C program. (10 Marks)
b. Explain the `setjmp()` and `longjmp()` functions with an example C/C++ program. (10 Marks)

Module-4

- 7 a. What are pipes? Explain different ways to view a half-duplex pipe. Write a C/C++ program to send data from parent process to child process using pipes. (10 Marks)
b. What is FIFO? With a neat diagram, explain the client-server communication using FIFO. (10 Marks)

OR

- 8 a. Write a note on: (i) Process Accounting (ii) Process Time (10 Marks)
b. Explain briefly with example : (i) Message Queue (ii) Semaphore (10 Marks)

Module-5

- 9 a. What are daemon process? Mention and explain coding rules of daemon process. (10 Marks)
b. Explain `kill()` API and `alarm()` API. (10 Marks)

OR

- 10 a. Define signal. Explain Sigaction API with demonstrating program. (10 Marks)
b. What is error logging? With a neat block diagram, discuss the error login facility in BSD. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8=50, will be treated as malpractice.