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15CS744

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019

Unix System Programming

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. What are major differences between ANSI C and K and R C? Explain with examples. (08 Marks)
- b. Mention the prototypes of sysconf, pathconf, and fpathconf functions. Write a program to demonstrate querying of limits by using above functions. (08 Marks)

OR

- 2 a. Differentiate between ANSI C and C++. (03 Marks)
- b. Explain the ANSI C CPP symbols. And also write a program to demonstrate these symbols. (05 Marks)
- c. Define API. Explain the common characteristic of APIs. (08 Marks)

Module-2

- 3 a. With a neat diagram, explain how UNIX Kernel supports for file manipulation. (10 Marks)
- b. Explain the following APIs. i) lseek iii) access. (06 Marks)

OR

- 4 a. What is the relationship between file stream pointer and file descriptor? Which functions are used to convert them one from each other and mention their prototypes. (06 Marks)
- b. Explain fcntl API. Give an example to demonstrate file locking using fcntl API. (10 Marks)

Module-3

- 5 a. Explain with a neat diagram, how a process can be initiated and how it can be terminated. (08 Marks)
- b. Explain wait and waitpid APIs with their prototype. Mention the differences between wait and waitpid. (08 Marks)

OR

- 6 a. Explain setjmp and longjmp APIs, with an example. (08 Marks)
- b. Explain BSDs job control mechanism with a neat diagram. (08 Marks)

Module-4

- 7 a. Explain sigaction API with a demonstrating program. (08 Marks)
- b. What are daemon processes? Explain with a neat diagram the error logging facility for a daemon process. (08 Marks)

OR

- 8 a. Write a C/C++ program to show the use of alarm API. (06 Marks)
- b. Explain daemon characteristics and coding rules. (10 Marks)

Module-5

- 9 a. What are pipes? Explain different ways to view a half-duplex pipe. Write a program to send data from parent process to child process using pipes. (08 Marks)
- b. What is a FIFO? With a neat diagram explain client server communication using a FIFO. (08 Marks)

OR

- 10 a. Explain message queue APIs with their prototypes. (08 Marks)
- b. Explain semctl and semop APIs with their prototypes. (08 Marks)

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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.