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13MCA351

Third Semester MCA Degree Examination, Dec.2019/Jan.2020

UNIX System Programming

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1
 - a. Define the major differences between ANSI "C" and K and R "C". Explain each with an example. (10 Marks)
 - b. Describe the common characteristics of API. Describe the error status code in detail. (10 Marks)

- 2
 - a. Describe different file types available in UNIX and POSIX systems. (10 Marks)
 - b. Explain the relationship between "C" stream pointers and file descriptors with examples. (05 Marks)
 - c. Describe about hard link and symbolic links in detail. (05 Marks)

- 3
 - a. Explain the following API's with their prototypes :
 - i) Open
 - ii) Close
 - iii) Read. (06 Marks)
 - b. Describe about file locking with various file locks that can be imposed on files by a process. (04 Marks)
 - c. Discuss the directory related functions. (10 Marks)

- 4
 - a. Explain briefly about memory layout of a 'C' program. (10 Marks)
 - b. What types of environment variables are available in UNIX? Explain each of them. (10 Marks)

- 5
 - a. Describe with block diagram the sequence of steps involved in network login. (10 Marks)
 - b. Explain wait(), waitpid(), wait3() and wait4() functions with their prototype and uses. (10 Marks)

- 6
 - a. What is daemon process? Explain daemon characteristics and coding rules. (10 Marks)
 - b. Explain about 'sigsetjump()' and 'siglongjmp()' API with prototype and example. (10 Marks)

- 7
 - a. Explain 'popen()' and 'pclose()' functions with their prototype and an example program to demonstrate popen and pclose. (10 Marks)
 - b. Explain about FIFO with its prototype. Discuss with an example, the client/server communication using FIFOs. (10 Marks)

- 8
 - Write a short note on the following :
 - a. Socket Descriptors
 - b. UNIX File Attributes
 - c. Race condition
 - d. Orphaned process. (20 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.