CBCS SCHEME

USN | | | | | | | | | | **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 width 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 APISs, 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.
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OR

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

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