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BMS College of Engineering, Bangalore-560019

(Autonomous Institute, Affiliated to VTU, Belgaum)

May 2016 Semester End Main Examinations

Course: UNIX SYSTEM PROGRAMMING **Duration: 3 Hours**

Course Code: 15IS4DCUSP **Max Marks: 100**

Date: 05.05.2016

Instructions: Answer FIVE FULL questions, choosing one from each unit.

UNIT-1

1.	a)	Distinguish between Hardlink and Softlink	05
	b)	Discuss the API Common Characteristics	05
	c)	Explain the various categories of files types available in unix? Illustrate giving some commands to create each type.	10

UNIT-2

2.	a)	Develop a C program to identify the type of the file and also print the link count of the file.	05
	b)	Explain the different ways in which a process can terminate? With a neat block schematic explain how a process is launched and terminated clearly indicating the role of C-startup routine and exit handlers.	05
	c)	Develop a program for file locking	05
	d)	Develop a program to reverse the contents of a file and store the reversed content in another file.	05

UNIT-3

3.	a)	List and explain the family of exec functions with their prototypes. How do they differ from each other? Also give one program example using any one of the exec functions.	06
	b)	Explain Network Logins? Explain sequence of processes involved in executing TELNET server.	07
	c)	Discuss how UNIX operating system keeps process accounting?	07

OR

4.	a)	Define race condition? Write a program in C to illustrate a race condition and to avoid a race condition.	10
	b)	Explain the following: i) waitid ii) wait3 iii) wait4	06
	c)	Discuss the concept of process groups and sessions.	04

UNIT-4

5.	a)	Explain alarm function with an example.	05
	b)	Illustrate posix.1b timers	05
	c)	Discuss the different source of signals. What are the three dispositions the process has when signals occur? Explain any four signals and write a program to setup a signal handler for SIGINT and SIGALRM signals.	10

UNIT-5

6.	a)	Define pipes? What are their limitations? Write a C program that sends "Hello World" message to the child process through the pipe. The child on receiving this message should display it on the standard output.	10
	b)	Explain different APIs used with message queues.	06
	c)	Discuss the application of FIFO.	04

OR

7.	a)	Define socket? Discuss how to create and destroy a socket.	06
	b)	Explain the concept of shared memory with an example.	06
	c)	With a neat block schematic, explain how FIFO can be used to implement client-server communication model.	08

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