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10CS62

# Sixth Semester B.E. Degree Examination, Dec.2015/Jan.2016

## UNIX System Programming

Time: 3 hrs. Max. Marks:100

**Note:** ***Answer FIVE full questions, selecting at least TWO questions from each part.***

### PART – A

1 a. Discuss the differences between ANSI C and K & R C with example for each. **(10 Marks)**

b. What are the API common characteristics? List any six values of the global variable errno along with their meanings whenever API's fail. **(10 Marks)**

2 a. Explain the commands to create different file types supported by UNIX. **(06 Marks)**

b. Explain UNIX Kernel support for files with a neat diagram. **(08 Marks)**

c. Differentiate symbolic links and hard links. **(06 Marks)**

3 a. Explain the following general file API's:
i) open( ) ii) fcntl( ) iii) lseek( ) **(12 Marks)**

b. Explain Symbolic Link file API's. **(08 Marks)**

4 a. Draw and explain the summary of starting and terminating a C program. **(06 Marks)**

b. With a neat sketch, explain the memory layout of a C-program. **(06 Marks)**

c. Explain exit, _exit and atexit functions with their prototypes. **(08 Marks)**

### PART – B

5 a. What is a race condition? Write a program for generating race condition. **(08 Marks)**

b. Explain in detail the family of exec functions. **(12 Marks)**

6 a. What are signals? Write a program to setup signal handler for the SIGINT signal using sigaction API. **(06 Marks)**

b. What is signal mask of a process? Explain sigprocmask function along with its prototype. **(06 Marks)**

c. Define daemon process. Discuss the basic coding rules of the daemon process. **(08 Marks)**

7 a. Discuss the applications of FIFOs. **(04 Marks)**

b. Explain Popen and Pclose functions. **(06 Marks)**

c. Explain different API's used with message queues. **(10 Marks)**

8 a. Explain shmget, shmctl, shmat and shmdt functions. **(12 Marks)**

b. Write short notes on client server properties. **(08 Marks)**

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