Code No: 09A70501 **R09**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD
B. Tech IV Year I Semester Examinations, November/December-2012
LINUX PROGRAMMING
(COMPUTER SCIENCE AND ENGINEERING)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks

1.a) Write a sed script to print all the lines of a **file** that is passed as command line argument by changing the string madras with Chennai.
b) Write in detail with examples on the commands chown, fgrep, ps and tar.
c) Write an awk program to print the fields 1 and 4 of a **file** that is passed as a command line argument. The file contains lines of information that is separated by "," as delimiter. The awk program must print at the end the sum of all 4th field data. [15]

2.a) Write briefly on case control structure in bash with examples. Write briefly on "||" operator in bash.
b) Write in detail on the features of test command.
c) Write in detail on the command expansion feature provided in bash with examples. [15]

3. Write a C program to implement "ls–li" command using directory API and other system calls. [15]

4.a) Write a C program to create a zombie process and print process details using ps command.
b) Write a C program to print the numbers from 1 to 10 with a time interval of 1 second using alarm and signal system calls. [15]

5.a) Write a C program to create a message queue with read and write permissions and write 3 messages to it with different priority numbers.
b) Write a C program that receives the messages from the above message queue and display them. [15]

6.a) Write a C program to create a shared memory and store username and mobile number details.
b) Write a C program to use the shared memory created by the above program and print the mobile number of a given username by searching the shared memory. [15]

7. Write in detail about how threads can be synchronized using semaphores and mutex primitives with example code. [15]

8. Write in detail about how client and server programs can be developed in C using udp based system calls. [15]

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