MANIPAL UNIVERSITY
SCHOOL OF INFORMATION SCIENCES

FIRST SEMESTER MASTER OF ENGINEERING – **ME** (EMBEDDED SYSTEMS)
DEGREE EXAMINATION – APRIL / MAY 2016

SUBJECT: ESD 615.2 (ELECTIVE 1) – LINUX & SCRIPTING LANGUAGES

Thursday, May 5, 2016

Time: 10.00 – 13.00 Hrs.   Max. Marks: 100

1.   Write a short note on LINUX file system? Explain any 5 LINUX file handling commands with examples.

(10 marks)

2.   A. Write a shell script and explain, to sum the digits of the number taken from the command line and check if it is a palindrome or not.
            B. Write a shell script and explain, to input 3 numbers from command line and find the greatest.

(5x2=10 marks)

3.   Write a one line script to do the following, and explain the script
            A. How to stop the process
            B. How to move foreground process to background
            C. Place suspended job in foreground
            D. List out all the currently running process
            E. List out all the signal names and signal id

(2x5=10 marks)

4.   Explain the following commands in Linux with an example for each
            A. uniq
            B. sort
            C. tee
            D. wc
            E. join

(2x5=10 marks)

5. Write a menu driven script using dialog utility to display file contents, write on to file or execute based on user choice which need to satisfy the following options:

    i) Menu need to have entries for "read, write, execute and exit" .
    ii) Filename and the mode of operation need to be read from the user.
    iii) With each selection the mode of operation of file and the existence of the file need to be checked.

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iv) The functionality of the script need to be continuous and only during the option of exit it need to come out of the script.

v) The options should do the proper functionality of display, write and execute.

(10 marks)

6. Write the alternative commands of the following using *sed* and explain
   a) tail -1 filename
   b) head -1 filename
   c) tr "ABCDE" "abcde" < filename
   d) cat filename
   e) grep '^new' filename.

(2x5=10 marks)

7. A. Write a short notes on the term "back referencing" with respect to regular expression.

   B. Write a script that ignores any "CTRL-C". In fact, when "CTRL-C" is entered, it should display a message"you pressed Control C" , and then continue to run.

(5x2=10 marks)

8. Write the *awk* script for the following and explain
   A. Print the number of fields in each row
   B. Filter out blank lines
   C. Add up the numbers in second column and print the sum and average.
   D. Print the fields in reverse order
   E. Print the total number of lines that contain the word 'echo'.

(2x5=10 marks)

9. A) Write a perl program to store phone numbers in a hash.
   Write a program to look up numbers by the person's name. Explain the script

   B) Write a perl program to capture all the prime numbers between 2 and a number the user gives you. Explain the script.

(5x2=10 marks)

10. Write scripts using grep and explain the functionality

    A) Write a shell script that displays a list of all the files in the current directory to which the user has read, write, and execute permissions.
    B) What command will display all lines that contain 'echo' in any file in the directory /etc/init.d?
    C) What command will display the lines in the file /etc/test that do not start with #
    D) Write a script which only counts the number of files excluding the directories in your present directory.
    E) Display 'localhost' information from the /etc/hosts file, display the line number(s) matching the search string and number of times the string occurs in that line.

(2x5=10 marks)

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