Reg. No.										

MANIPAL UNIVERSITY
SCHOOL OF INFORMATION SCIENCES

THIRD SEMESTER MSc Tech (EMBEDDED SYSTEMS / EMBEDDED SYSTEMS & INSTRUMENTATION – ESIGELEC, France)
DEGREE EXAMINATION – APRIL / MAY 2016

SUBJECT: ESD 615.2 (ELECTIVE 1) / ESI 615.5 (ELECTIVE 1) – LINUX & SCRIPTING LANGUAGES

Thursday, May 5, 2016

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

1. A. Explain the use of *test* command for various purposes with the help of examples.
   B. Explain the importance of Redirection and Piping in Linux with examples.
   (2x5=10 marks)

2. A. How to perform real number calculation in shell script and store result to third variable, let's say a=5.66, b=8.67, c=a+b? Explain the working of the script.
   (3 marks)

   B. Write a script to determine whether given file exist or not, file name is supplied as command line argument, also check for sufficient number of command line argument. Explain the working of the script.
   (4 marks)

   C. Write a shell script to read a character from the user and check whether given character is an alphabet or digit or special character? (3 marks)

3. A. Explain the different types of process available in Linux.
   B. Write a script to print the current process id, check for the currently running background process, kill it and launch a new process in the background, print its PID, Explain the working of the script.
   (2x5=10 marks)

4. Write the alternative commands for the following "sed" command and explain (don't use sed & awk)
   A. sed –n '$p' filename
   B. sed –n '1p' filename
   C. sed 'y/ABCDE/abcde/' filename
   D. sed –n 'p' filename
   E. sed –n '/^new/p' filename
   (5x2=10 marks)

5. Write short notes on dialog utility, and use *dialog utility* to create a folder, get the name of the folder from the user. Display the message to the user that successfully created or not.

(10 marks)

6. Write *sed* commands for the following
   A. Print the lines that do not contain the word *run*
   B. Duplicate empty lines in a file
   C. Remove the first 10 lines from a file
   D. Delete every alternate line beginning with second line.
   E. Store all even numbered line from a file *old* to *new*.

(5x2=10 marks)

7. Explain the functionality of *shift*? Write a script using *shift* and explain using the given guide lines
   A) Take a decimal number as input from the user
   B) Change the decimal number in to different base ie hexadecimal, octal, and binary
   C) Display the output

(10 marks)

8. A) Write a script using *awk* to find factorial. Explain the working of the script.

(6 marks)

   B) Write a script to find the sum of numbers 1 to 10 by using awk. Explain the working of the script.

(4 marks)

9. Explain File handling in perl with examples.

(10 marks)

10. Write scripts for the following (do not use sed and awk). Explain the commands used and the working of the scripts
    a) Change the last modified time of the file to current time.
    b) Count total number of lines in a file
    c) Count total number of directories in the present working directory.
    d) Count the number of directories to be changed to reach the present working directory
    e) Add line numbers to a file.

(5x2=10 marks)

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