Fourth Semester B.E. Degree Examination, June/July 2015

UNIX and Shell Programming

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, selecting atleast TWO questions from each part.*

PART – A

1 a. Explain the architecture of UNIX operating system with a neat diagram. **(08 Marks)**
   b. Illustrate with a diagram, the typical UNIX file system and explain different types of files supported in UNIX. **(08 Marks)**
   c. Explain internal and external commands with example. **(04 Marks)**

2 a. Which command is used for listing file attributes? Briefly describe the significance of each field of the output. **(08 Marks)**
   b. A file's current permissions are rw - r - x r - -. Specify the chmod expression required to change them for the following :
       i) r w x r w x r w x
       ii) r - - r - - - - -
       iii) - - - - - - - - -
   Using both the relative and absolute methods of assigning permissions. **(06 Marks)**
   c. What are the different modes of vi editor? Explain with a diagram. **(06 Marks)**

3 a. Explain the three standard files with respect to UNIX operating system. **(06 Marks)**
   b. Explain the mechanism of process creation using system calls in UNIX. **(06 Marks)**
   c. Explain the following environment variables with examples :
       i) SHELL
       ii) LOGNAME
       iii) PATH
       iv) **(08 Marks)**

4 a. Distinguish between hard links and soft links with suitable examples. **(06 Marks)**
   b. Explain the following filters with options :
       i) pr
       ii) sort. **(08 Marks)**
   c. Use find command to locate from your home directory :
       i) All files with the extension -html
       ii) All files having inode number 9076
       iii) All directories having permissions 666
       iv) All files not accessed for more than a year
       v) All but the C program files
       vi) All files named a-out and all "C" source files and remove them interactively. **(06 Marks)**

PART – B

5 a. Explain grep command with all options. **(08 Marks)**
   b. Briefly explain the different ways of addressing used in sed with example. **(06 Marks)**
   c. Explain BRE (Basic Regular Expression) character subset used for constructing regular expressions. **(04 Marks)**
   d. Write the commands for the following :
      i) Use sed to delete all blank lines from a file named sample
      ii) Use sed to replace all occurrences of the word "UNIX" with "LINUX" in a file named sample. **(02 Marks)**

6 a. What is shell programming? Write a menu – driven shell script to perform the following :
      i) List of users who are logged in
      ii) List of files in the current directory
      iii) Today's date
      iv) Quit to UNIX. **(08 Marks)**
   b. Explain with an example "while" and "for" loop in shell programming. **(06 Marks)**
   c. Briefly explain set and shift commands in UNIX to manipulate positional parameters with example. **(06 Marks)**

7 a. What is AWK? Explain any three built – in functions in AWK. **(07 Marks)**
   b. Explain associative arrays in AWK. **(06 Marks)**
   c. Explain built – in variables in AWK. **(07 Marks)**

8 a. Explain the string handling functions supported by PERL and also write a PERL script to convert a given decimal number to binary equivalent. **(12 Marks)**
   b. Explain the following in PERL with example :
      i) split
      ii) join **(08 Marks)**

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