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Fourth Semester B.E. Degree Examination, Dec.2014/Jan. 2015
UNIX and Shell Programming

Time: 3 hrs.

Max. Marks:100

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

PART – A

1.
 - a. Describe briefly the UNIX architecture explaining the role played by the kernel and shell in sharing the work load. (08 Marks)
 - b. Draw the tree structure of the file system created by the following commands (assume you are in the directory/usr/office). Why is it not possible to issue the command rmdir/usr/office/right.

```
$ mkdir left
$ mkdir middle
$ mkdir right
$ cd left
$ mkdir left middle right
$ cd ../middle
$ mkdir dir1 dir2/usr/office/right/dir3.
```

(08 Marks)
 - c. Explain the concept of absolute path name and relative pathname. (04 Marks)
2.
 - a. Which command is used for listing file attributes? Explain briefly the significance of each field of the output. (06 Marks)
 - b. Assuming that a file's current permissions are rwxr--r-x, specify the chmod expression required to change them to :
 i) rwxrwxr-x
 ii) r-xr-x--x
 iii) ---r--r-x
 iv) ---rwx--
 using both relative and absolute methods of assigning permissions. (08 Marks)
 - c. Explain the three modes of vi and explain how you can switch from one mode to another. (06 Marks)
3.
 - a. Explain the three sources of standard input and standard output. (06 Marks)
 - b. Explain what these wild – card patterns match :
 i) [A – Z]????*
 ii) *[0 – 9]*
 iii) *![0 – 9]
 iv) *.[!s] [!h]. (08 Marks)
 - c. What is a process? Mention briefly the role of fork – exec mechanism in process creation. (06 Marks)
4.
 - a. What are hard-links? Explain two application areas of hard-links. What are the two main disadvantages of the hard-link? (06 Marks)
 - b. Explain these commands with examples : i) umask ii) touch . (06 Marks)
 - c. Explain the following commands :
 i) pr ii) tail iii) sort iv) tr. (08 Marks)

PART – B

- 5 a. Explain the grep command with options. (08 Marks)
b. What is sed? Explain addressing in sed, with suitable examples. (08 Marks)
c. Explain the anchoring characters. (04 Marks)
- 6 a. Explain the special parameters used by the shell. (06 Marks)
b. What is shell script? Explain the following statements with syntax and examples :
i) if ii) case iii) while. (10 Marks)
c. What is the exit status of a command and where is it stored? (04 Marks)
- 7 a. Explain awk's build-in variables. (06 Marks)
b. Write a program in awk to store the totals of the basic pay, da, hra and gross pay of the sales and marketing people. (06 Marks)
c. Briefly describe the built-in functions in awk, with examples. (08 Marks)
- 8 a. Write a Perl script to determine whether the given year is a leap year or not. (07 Marks)
b. Write a Perl script to convert decimal number to binary. (07 Marks)
c. Explain variables and operators in Perl. (06 Marks)