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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 r w x r -- r - x, specify the chmod expression required to change them to :
i) r w x r w x r - x
ii) r - xr - x -- x
iii) --- r -- r - x
iv) --- r w - r --,
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)
