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 pathname 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 – x, specify the chmod expression required to change them to :
     i)   r w x r w x r – x
     ii)   r – x r – x – x
     iii)   – – – 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)

* * * * *