

--	--	--	--	--	--	--	--	--	--

### 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 at least 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-xr-x, specify the chmod expression required to change them to:  
 i) rwxrwxr-x  
 ii) r-xr-x  
 iii) ---r---x  
 iv) ---r--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)