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10CS4

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 at least 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 file 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) `rwxrwxrwx`
 - 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) PS2. (08 Marks)

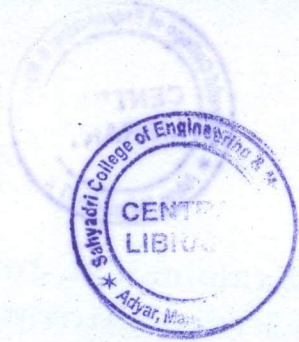
- 4 a. Distinguish between hard links and soft links with suitable examples. (06 Marks)
- b. Explain the following filters with options :
 - i) `pr`
 - ii) `sort`. (08 Marks)
- c. Use `find` command to locate from your home directory:
 - i) All files with the extension `.html`
 - ii) All files having 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)

Blank lines on the remaining blank pages. Questions written eg, 42+8 = 50, will be treated as malpractice.

Do not draw diagrams. The evaluator will mark them.

Do not complete your answer until you are asked to do so.

Important Note



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)
