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Fourth Semester B.E. Degree Examination, December 2012

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. Explain salient features of UNIX operating system. (07 Marks)
 - b. Compare internal and external commands in UNIX with suitable example. Explain why cd command cannot be an external command. (06 Marks)
 - c. Illustrate with a diagram typical UNIX file system and explain different types of files supported in UNIX. (07 Marks)

2.
 - a. Explain the basic file attributes displayed by `ls -l` command. (06 Marks)
 - b. Discuss relative and absolute methods for changing file permissions. (06 Marks)
 - c. Explain with a diagram the different modes of `Vi` editor and list the commands in each mode. (08 Marks)

3.
 - a. Explain with an example use of single quote, double quote and back quote in a command line. (06 Marks)
 - b. Explain the following commands:
 - i) `cp ????? progs`
 - ii) `kill -S KILL 121 122`
 - iii) `wc -l < user.txt`
 - iv) `ps -e l` (06 Marks)
 - c. Explain the mechanism of process creation using system calls in UNIX. (04 Marks)
 - d. Explain the following environment variables:
 - i) PATH
 - ii) HISTSIZE
 - iii) PS2
 - iv) SHELL (04 Marks)

4.
 - a. Discuss with example hard link and soft link applicable to UNIX files. (06 Marks)
 - b. Explain the following commands:
 - i) `umask 022`
 - ii) `find / ! -name "*.C" - Print`
 - iii) `tr -d '://' < emp.txt`
 - iv) `touch -m 0303 10 30 vtu.txt` (08 Marks)
 - c. Explain the following filters with options:
 - i) `Paginate - Pr`
 - ii) `Sort - Sort` (06 Marks)

PART – B

5.
 - a. Explain with example basic regular expressions. (06 Marks)
 - b. Locate lines longer than 100 and smaller than 150 characters using (i) `grep`, (ii) `sed`. (04 Marks)
 - c. Discuss stream editor – `sed` with options. (06 Marks)
 - d. How do these expressions differ:
 - i) `[0-9]*` and `[0-9][0-9]*`
 - ii) `^[^^]` and `^^^` (04 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.

- 6 a. What is shell programming? Write a shell program to create a menu and execute a given option based on users choice. Options include (i) list of users, (ii) list of processes, (iii) list of files. (06 Marks)
- b. Explain with example set and shift commands in UNIX to manipulate positional parameters. (04 Marks)
- c. Discuss use of trap statement for interrupting a program in UNIX. (04 Marks)
- d. Explain with an example while and for loop in shell programming. (06 Marks)
- 7 a. Write a note on awk and explain built in variables in awk. (08 Marks)
- b. Explain with example the following awk function:
i) Split () ii) Substr () iii) length () iv) index () (08 Marks)
- c. i) Write an awk statement to print odd numbered lines in a file.
ii) Write an awk statement to delete blank lines from a file. (04 Marks)
- 8 a. Explain string handling function in perl. (06 Marks)
- b. Using command line arguments, write a perl program to find whether a given year is a leap year. (07 Marks)
- c. Write a perl program to convert a given decimal number to binary equivalent. (07 Marks)

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