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10CS44

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 V_i 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)

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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