Total No. of Questions :5]

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Roll No ....

MCA - 502

M.C.A. V Semester

Examination, December 2014

Unix and Shell Programming

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) What are the components of UNIX? Describe them.
    b) Draw block diagram of the system Kernel.
    c) What is buffer header? Explain the structure of buffer pool.
    d) Explain various scenarios for retrieval of the buffer. Also describe its algorithm.

    OR

    Explain algorithms for reading and writing disk blocks.

Unit - II

2. a) Compare inode and incore inodes.
    b) If a process sleeps in algorithm 'iget' when it finds the inode locked in the Cache, why must it start the loop again from the beginning after waking up?
    c) Explain system calls for the Unix system.
    d) Write algorithm for conversion of a path name to an Inode.

    OR

    Explain how inodes are assigned to new file, by taking examples.

Unit - III

3. a) Explain process creation in UNIX.
    b) What are Signals? How many signals are there in UNIX system V (Release 2)
    c) Write about inter process communication.
    d) Explain sleep process creation and termination.

    OR

    Describe the manipulation of process address space.

Unit - IV

4. a) Distinguish between an editor and word processor mention different modes of 'Vi'.
    b) Is it possible to use multiple search patterns with all grep family of commands? Substantiate your answer?
    c) Give syntax of 'sed' command line and briefly explain each component of this line.
    d) Write a shell script that receives any number of file names an arguments checks of every argument supplied a file or a directory and reports accordingly whenever the argument is a file, the number of lines on it is also reported.

    OR

    Mention different loop-control structures that are used in shell programming.

Unit - V

5. a) Explain LINUX structure.
    b) Discuss the structure of 'awk' script.
    c) Differentiate between list, arrays, and Hashes by giving examples.
    d) Write an 'awk' script that reads a file and prints its records in reverse order.

    OR

    Explain the following function in perls, by taking examples.

    a) chop ( )   b) chomp ( )   c) split ( )
    d) joint ( )   e) splice ( )   f) push ( )
    g) pop ( )

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