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Total No. of Questions :8] *[Total No. of Printed Pages : 2*

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MCA-502

M.C.A. V Semester

Examination, November 2019

Unix and Shell Programming

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) What is Unix operating system? Discuss the architecture of unix operating system.
   b) What is Buffer Cache? Discuss the scenarios for retrieval of a buffer.

2. a) What is In-core Inode? Explain an algorithm for allocation of In-core inodes.
   b) Write an algorithm to convert a path name to an Inode.

3. a) Briefly explain the following
      i) Super block
      ii) Directory structure of Unix file system
   b) Write an algorithm for conversion of byte offset to block number in file system.

4. a) What is Mount table? Write an algorithm for mounting a file system.
   b) What is Link System Call? Discuss the algorithm for linking a file.

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5. a) What is a process in Unix? Explain the complete states and condition for state transition in case of Unix.
   b) Discuss the algorithm for " Fork" System call.

6. a) What are the basic functions of Shell? Explain the different types of shells used in unix.
   b) Explain the following shell statement taking suitable shell script: http://www.rgpvonline.com
      i) If-else
      ii) For-loop

7. a) What is AWK programming? Discuss AWK built in variables and operators.
   b) Discuss history, features and various flavours of Linux operating system.

8. Write short notes on the following
   a) Part programming
   b) Pipe system call
   c) BEGIN and END section in AWK programming
   d) Shell variables

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