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

Roll No .....

MCA-502

M.C.A. V Semester

Examination, December 2017

Unix and Shell Programming

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Describe architecture of UNIX operating system.
   b) What is Buffer cache? How it improves the performance of a system?

2. a) Write an algorithm to manage Buffer cache in Unix operating system. Give all possible conditions.
   b) What is In-core inode? Explain an algorithm for allocation of In-core inodes.

3. a) Write an algorithm to convert a path name to an Inode.
   b) Briefly explain the following:
      i) Super Block
      ii) Directory structure of UNIX file system

4. a) What is Link system call? Discuss the algorithm for Linking a file.
   b) Describe the mounting and unmounting of file system.

5. a) What is a process in UNIX? Explain the complete status 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 OS.
   b) Explain the following shell statement taking suitable shell script.
      i) While
      ii) If else
      iii) Test
      iv) Until

7. a) Write any five awk built in function.
   b) Discuss history, features and various flavours of Linux operating system.

8. Write short notes on the following: (any four)
   a) PML programming
   b) BEGIN and END section in awk programming
   c) STAT and FSTAT
   d) Open system call
   e) File types in UNIX

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