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MCAQ/D-21 24055
LINUX & SHELL PROGRAMMING
Paper–MCA-14-53

Time Allowed : 3 Hours] [Maximum Marks : 80

Note : Attempt **five** questions in all, selecting at least **one** questions from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. (i) Write short note on inode block. 4

   (ii) What is dynamic loader? 4

   (iii) Briefly explain how the file access permissions are handled in Linux. 4

   (iv) What are shell variables? Discuss. 4

UNIT-I

2. (a) Discuss the architecture of Linux and explain how hard disk partitions are created in Linux. 10

   (b) Discuss the system startup and shutdown processes. 6

3. What are system calls? Explain various file-related system calls using suitable examples. 16

UNIT-II

4. (a) Write short note on : 8

   (i) Process environment (ii) Zombie Process.

   (b) How makefiles can be used to manage large 'C' projects? 8

5. How can debugging be done using gdb? Discuss the purpose & use of various gdb debugger commands. 16

UNIT-III

6. What is the role of system administrator in basic administration in Linux? Discuss various commands for managing user accounts in Linux using suitable examples. 16

7. What are signals? What are various classes of signals? Give a brief description of some important signals. 16

UNIT-IV

8. (a) How can the jobs be controlled using at and cron? Also discuss the use of nice command. 8

   (b) Explain various operators provided by shell for string comparison, numeric comparison, file checking and logical operators. 8

9. (a) Write a shell script to display the number of words and number of lines present in a given file. 8

   (b) Explain various conditional and looping statements in bash shell using examples. 8