

Roll No. ....

Total Pages : 3

CMCA/M-22

24519

## LINUX AND SHELL PROGRAMMING

Paper-MCA-20-22

Time Allowed : 3 Hours]

[Maximum Marks : 75

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

### Compulsory Question

1. (a) What is a shell? How many different types of shells are there? Explain. 3
- (b) What is process table? Discuss. 4
- (c) What is lilo? Discuss the booting process in Linux. 4
- (d) How can the processes be connected with pipes? Discuss about the output of the command : `ls | tee list.txt`. 4

### UNIT-I

2. (a) Discuss the history of Linux and the organization of file systems of Linux. 6
- (b) Discuss various blocks that constitute the Linux/Unix file system. 9
3. (a) How can the permissions and ownerships of files and directories be viewed and changed in Linux? Discuss using the general format of commands and examples. 7

(b) Explain following commands in Linux with their format using suitable examples : 8

(i) bc (ii) script (iii) tee (iv) date.

### UNIT-II

4. What are system calls and what role do they play in the system? Explain the following file-related system calls using suitable examples : (i) reading files (ii) writing to files (iii) relocating file descriptors (iv) unlinking files (v) accessing file status information (vi) changing permission of files. 15
5. Discuss various process related and process scheduling commands using suitable examples. How can we manage multiple processes? 15

### UNIT-III

6. (a) Discuss the commands to create, modify and delete the user accounts and groups using examples. 9
- (b) Discuss the following networking tools : 6
- (i) ping (ii) ftp (iii) rlogin.
7. (a) How are file systems created and mounted/unmounted in Linux? Discuss. 8
- (b) How makefiles can be used to manage large 'C' projects? 7

### UNIT-IV

8. (a) Explain various filters in Linux using examples. 10
- (b) Explain different file and string test operators with examples. 5

9. (a) Explain various iterative statements available in bash shell using examples. Also write a menu driven shell script to copy, rename and delete a file. 9
- (b) Discuss the following command using examples :  
(i) export (ii) basename (iii) sleep (iv) shift. 6

