

Roll No. ....

Total Pages : 03

**CMCS/D-23**

**24037**

LINUX AND SHELL PROGRAMMING

MS-20-13

(CBCS)

Time : Three Hours]

[Maximum Marks : 75

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

**(Compulsory Question)**

1. (a) Explain the commands that are used for arithmetic operations in Linux. **4**
- (b) Discuss the *two* functions that are commonly used to send signals. **4**
- (c) Discuss the mail command using example. **4**
- (d) How is data passed to a shell script using command line arguments ? **3**

**Unit I**

2. (a) Discuss the basic features of Linux. How is it different from Unix ? **5**

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(b) How the file systems can be accessed ? Also discuss the structure of file systems. **10**

3. Discuss various file related commands in Linux using the syntax and examples. How can we grant and revoke permissions to Linux files and directories ? Explain with suitable examples. **15**

### Unit II

4. Discuss various process oriented and process scheduling commands using suitable examples. How can we manage multiple processes ? **15**

5. Discuss the following system calls using suitable examples : **15**

- (i) open
- (ii) write
- (iii) access
- (iv) link
- (v) exec
- (vi) fork
- (vii) wait
- (viii) exit.

### Unit III

6. (a) How can the system administrator create, modify and delete the user accounts and groups ? Explain using the commands with syntax. **9**

(b) Discuss the following networking commands : **6**

- (i) netstat
- (ii) ping
- (iii) ftp.

7. How can we handle projects using makefile ? Design a Makefile that automatically generates dependencies and incorporates all of the preceding information. **15**

### Unit IV

8. (a) What are shell scripts and shell variable ? Explain the *two* types of shell variables. **7**

(b) Discuss the following filters using examples : **8**

- (i) sort
- (ii) cut
- (iii) fgrep
- (iv) tr.

9. Discuss iterative statements available in bash shell using examples and write a menu driven shell script for converting all the capital letters in a file to small case letters and vice-versa. **15**