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MCA IV SEMESTER

Design of Unix OS & Shell Programming (MCA-17-204)

Time : 3 Hours] [Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART–A

1. (a) Which different types of shells are available in Unix? (1.5)

(b) What is the meaning of . and ..? (1.5)

(c) What is the difference between scheduling process using batch command and using at command? (1.5)

(d) What do you mean by filter? Give example of filters. (1.5)

(e) How would you decrease the priority of a particular process? (1.5)

(f) What are the various features of Unix? (1.5)

(g) What are the two types of page faults? (1.5)

(h) How does Unix users communicate with each other? (1.5)

(i) What do you mean by password ageing? (1.5)

(j) What is the difference between the boot block and data block? (1.5)

PART–B

2. (a) What is a kernel in an operating system? Explain in detail the architecture of Unix kernel. (8)

(b) What are the different types of files in a Unix operating system? Explain briefly. (7)

3. (a) What are different modes of vi editor? Explain them. (7)

(b) What are positional parameters? Explain what the shift command does to the positional parameters by taking a suitable example. (8)

4. (a) What is process scheduling? Explain the fair share scheduler by taking a suitable example. (8)

(b) Explain the different components that form the contexts of a process in Unix. (7)

5. (a) Explain the following commands with example

(i) ls (ii) head (iii) nohup (iv) lp (v) ulimit. (5)

(b) What is an inode? How does kernel assign inode to a new file? Explain it. (10)

6. (a) Write a shell script which receives two filenames as arguments. It should check whether the two file's contents are same or not. If they are same then second file should be deleted. (7)

(b) What is demand paging? Explain the data structures used for demand paging. (8)

7. (a) What is system administration? Explain the various privileges of a system administrator? (8)

(b) What is file permission? What are the different ways of setting the file permission? Explain it by giving suitable example. (7)