

YMCA UNIVERSITY OF SCIENCE & TECHNOLOGY, FARIDABAD

MCA 4th Semester

Design of Unix OS & Shell Programming (MCA-402)

Time: 3 Hours

Max. Marks:60

- Note: 1. It is compulsory to answer the questions of Part -1. Limit your answers within 20-40 word in this part.
2. Answer any four questions from Part -2 in detail.
3. Different parts of the same question are to be attempted adjacent to each other.
4. Assume suitable standard data wherever required, if not given.

PART -1

- Q1 (a) Define file structure of Unix File System? (2)
- (b) What does a sticky bit in a executable file signify? (2)
- (c) List out various types of information handle by INODE of a file (2)
- (d) Write a command (2)
- i) To find out free space available in MBs.
- ii) Recording your login session in a file called session.lst.
- (e) Explain the concept of Pipes in Unix environment? (2)
- (f) What is difference between the following vi editor commands: (2)
- :q, ZZ
- (g) Differentiate between insert mode and ex command mode in Vi editor? (2)
- (h) Discuss various situations where using shell programming is very beneficial? (2)
- (i) List various administrative commands of UNIX environment? (2)
- (j) Difference between `cat < file1 > file 2` and `cat >file2 < file1` (2)

PART -2

- Q2 a) Explain in detail Architecture of UNIX operating System? (5)
- b) Explain in detail various fields handled by Inode block? (5)
- Q3 a) List out various communication related commands along with examples? (5)
- b) How can we calculate logical address block that contains inodes? (5)
- Q4 Explain the significance of priority of a process in Unix environment? How the priority of a process can be changed? Explain this with the help of an example? (10)
- Q5 a) Explain in detail the concept of process scheduling with the help of an example? (5)
- b) Explain the method to allocate space for Maps in Unix Environment? (5)
- Q6 Write a shell script to print first ten prime numbers? (10)
- Q7 Write Short Note On: (10)
- a) Page stealer
- b) Fair share Scheduling
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