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Third Semester B.E Degree Examination, Feb./Mar.2022 UNIX and Shell Programming

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain in detail the major components of UNIX operating system with a neat diagram. (08 Marks)
- b. Clearly distinguish between UNIX Internal and External commands. (04 Marks)
- c. Explain the general format of a Unix command and write a note on 'who' command with a suitable example. (04 Marks)

OR

- 2 a. Explain briefly the features of UNIX operating system. (06 Marks)
- b. Define 'man' command. Explain the different sections in the man command page. (04 Marks)
- c. Illustrate with an example the commands used for creation and maintenance of user accounts. (06 Marks)

Module-2

- 3 a. Mention the different categories of files that exists in UNIX. Discuss each one of them briefly. (06 Marks)
- b. Name the commands used for the following purpose and explain the same with suitable example:
 - (i) Displaying and creating files.
 - (ii) Copying a file.
 - (iii) Counting lines, words and characters.
 - (iv) Compressing and decompressing files.
 - (v) Displaying data in Octal form. (10 Marks)

OR

- 4 a. Illustrate with a diagram the typical UNIX file system and explain parent-child relationship. (06 Marks)
- b. Explain the UNIX command used for listing file attributes and also briefly describe the significance of each field of command output. (08 Marks)
- c. Assume that, a file 'student.txt' is having current permission as $rw-r-xr-x$. Change the current permission of a given file to the following mode using relative method:
 - (i) $rw \times rw - rw -$
 - (ii) $r--r-----$ (02 Marks)

Module-3

- 5 a. What are the different modes of Vi editor? Explain with a neat diagram. (06 Marks)
- b. With suitable example, explain the grep command with all its options. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, $42+8 = 50$, will be treated as malpractice.

OR

- 6 a. Explain the following commands with respect to Vi editor:
- i) :.,\$w fl.C
 - ii) ? Printf
 - iii) :3,10s/cnt/count/gc
 - iv) 20h
 - v) rS
- (05 Marks)
- b. Explain the three standard files for redirection in UNIX system. (06 Marks)
- c. Explain basic regular expression characters with suitable example. (05 Marks)

Module-4

- 7 a. Write the significance of special parameters used by the shell with an examples program. (06 Marks)
- b. Explain sort command and all its options with example. (10 Marks)

OR

- 8 a. Define dangling symbolic link. Differentiate between hard link and soft link in UNIX with suitable example. (06 Marks)
- b. Explain how the 'for' loop in shell programming differs from other programming languages and brief out all the possible sources of lists in 'for' loop. (07 Marks)
- c. Consider the database file 'student.lst' with the following fields :
- | Name | USN | Semester | Department | DOB | Marks |
|------|-----|----------|------------|-----|-------|
| | | | | | |
| | | | | | |
| | | | | | |
- i) Display first 3 lines of a given file.
 - ii) Display the content of a file from 11th line.
 - iii) Extract the USN and Marks fields from the file. (03 Marks)

Module-5

- 9 a. Explain the mechanism of process creation using system calls in UNIX system and the creation of the shell. (06 Marks)
- b. Explain the command used for premature termination of a process with suitable examples. (06 Marks)
- c. Write a perl script to accept a decimal number as argument and convert it to binary number. (04 Marks)

OR

- 10 a. Explain 'PS' command with its various options. (08 Marks)
- b. Use 'find' command to locate the following:
- i) Search directories called backup from /usr directory downwards and print it.
 - ii) Find all files which begin with 'a' or 'b' character from home directory downwards and print them.
 - iii) Search the current directory downwards all files whose owner is 'student' and group owner is 'class'.
 - iv) Locate all files in root directory downwards which has exactly two links. (04 Marks)
- c. Write a brief note on associative arrays in perl. (04 Marks)
