CBCS SCHEME

USN | | | | | | | | | | |

17CS35

Third Semester B.E. Degree Examination, June/July 2019
UNIX and Shell Programming

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. With a neat diagram, explain the architecture of UNIX operating system. **(08 Marks)**

b. Differentiate between internal and external commands in UNIX with suitable examples. **(05 Marks)**

c. Write down the key combinations for managing the non-uniform behavior of key board and terminal for the following :
i) Backspacing doesn't work
ii) Killing a line
iii) Interrupting a command
iv) Terminating commands input
v) Keyboard is locked
vi) [Enter] key doesn't work
vii) Terminal behaves in eratic manner (command). **(07 Marks)**

OR

2 a. Explain the salient features of UNIX operating system. **(08 Marks)**

b. Differentiate between 'more' and 'less' page programs in UNIX. **(04 Marks)**

c. List and describe the mandatory and optional sections of man page in UNIX operating system. **(08 Marks)**

Module-2

3 a. Illustrate with a neat diagram typical UNIX file system and explain different types of files supported in UNIX. **(08 Marks)**

b. Assume you are in /home/Kumar, which of these commands will work when executed in sequence? Explain the proper reasons.
mkdir a/b/c → mkdir a a/b
mkdir a a/b a/b/c → rmdir a/b/c → rmdir a a/b → mkdir a/p a/q a/p/r
Draw the final tree structure for directory 'a'. **(07 Marks)**

c. Explain the following commands with an example. i) cd ii) pwd iv) rmdir v) wc. **(05 Marks)**

OR

4 a. Which command is used for listing file attributes? Explain the significance of each field in the output. **(08 Marks)**

b. Explain the following commands with an example for each.
i) cp ii) rm iii) mv iv) cat. **(04 Marks)**

c. Current file permissions of a regular file "unix" are rw_ _w_ _ _x. Write chmod expressions required to change it to the following :
i) _wxrwxr_x ii) _ _ _r _ xrw_ iii) rwx_ _x _ _ _ iv) r _ _ _ wx _ _ _.
Using both relative and absolute methods of assigning permissions. **(08 Marks)**

Module-3

5 a. Explain the three modes of vi. Indicate clearly how can you switch form one mode to another. Explain the following input mode commands : i, I, a A, r, R, o, O, s, S. **(10 Marks)**

b. Explain what these wild-card pattern match
i) [A – Z]???? * ii) *[! 0 – 9]* iii) *.[!t][!x][!t] **(06 Marks)**

c. Explain the navigation keys for the following types of navigations in vi editor.
i)Movement in four directions
ii)Word navigation. **(04 Marks)**

OR

6 a. With suitable examples, explain the 'grep' command with its various options. **(06 Marks)**

b. Briefly explain Basic Regular Expression (BRE) and Extended Regular Expression (ERE) metacharacters. **(10 Marks)**

c. Write a regular expression to match the following i) a decimal number which is non negative and floating point number ii) A valid 'C' variable. **(04 Marks)**

Module-4

7 a. Explain the following commands with an example for each. i) head ii) tail iii) cut iv) paste. **(08 Marks)**

b. What is shell programming? Write a shell program to create a simple calculator which can perform basic arithmetic operations like addition, subtraction, multiplication or division, depending upon the user input. **(10 Marks)**

c. Write the syntax for if-else-fi statement in shell programming. **(02 Marks)**

OR

8 a. Write a shell program to get the following details of the student. Name, age, USN and gender. Output all the details to the terminal. And also output whether the student is eligible to vote or not with suitable messages. **(08 Marks)**

b. Distinguish between hard links and soft links. **(04 Marks)**

c. Write and explain the syntax of 'while' and 'for' loops in shell programming. **(08 Marks)**

Module-5

9 a. Write a Perl script to determine whether the given year is a leap year or not. **(08 Marks)**

b. What is the difference between a job and a process? How do you i) suspend the foreground job ii) move a suspended job to the background iii) bring back a suspended job to the foreground? **(06 Marks)**

c. Explain the mechanism of process creation. **(06 Marks)**

OR

10 a. Explain the following string handling functions of PERL with example :
i) length ii) index iii) substr iv) reverse. **(08 Marks)**

b. Explain the following commands :
i) at ii) cron iii) nice iv) nohup. **(08 Marks)**

c. With suitable examples, explain 'split' and 'join' functions in PERL. **(04 Marks)**

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