Reg. No.									

Manipal Institute of Technology

(A Constituent Institute of Manipal University)

VI SEMESTER B.TECH.
END SEMESTER EXAMINATION – MAY 2016

SUBJECT: INTRODUCTION TO LINUX AND SHELL SCRIPTING [MCA 450]

16-05-2016

Time : 3 hours Max. Marks : 50

Instructions to Candidates

1. Answer ANY FIVE FULL questions.
2. Missing data may be suitably assumed.

1A Explain the Linux kernel and its primary functions.

1B What are file attributes? How can a file owner define the file access permissions for group and other users? When a directory has "no read" permission, what are the restrictions for the user accessing this directory?

1C What do the following commands do?

a. cp ???? my_prg

b. wc –l 0 < student.txt

(5 + 3 + 2)

2A Explain the Linux standard file descriptors. What the two ways to redirect output in a shell script?

2B Explain the following commands with an example:

a. Running jobs in the background (with & and nohup)

b. Execute later (at and batch)

2C Which are the two signals Linux ignores? How can a shell script a catch a signal?

(5 + 3 + 2)

3A Write a shell script to create a menu which displays the following:

1. List of files
2. Contents of files
3. Current Date
4. Current users in the system.

Implement the menu options using respective functions. Option 3 should display the date as Today's date is Day: 12 Month: August Year: 2016.

3B Write a shell script to check if a given string is a palindrome or not (do not reverse the string).

3C Differentiate between absolute pathname and relative path name with an example for each.

(5 + 3 + 2)

4A Explain how the bash shell of Linux supports user-defined functions. Can you pass parameters to functions from inside the script and through command line arguments? Give an example for each.

4B Explain if the following constructs in detail:

i. case-esac ii. while

Write a script to generate the following series: 1, 3, 2, 4, 3, 5, 4, 6 100

4C What are the two modes in which the "vi" editor works? Name the commands to :

a. Delete multiple (say 3) lines

b. Replace a single character

(5 + 3 + 2)

5A Explain "positional parameters" in Linux? Write a shell script that two strings as command line arguments, validates the number of arguments, checks if strings are non-empty. Display appropriate error messages. Convert the first argument into its uppercase and counts the number of characters in the second argument displays the following output.

The first argument (in upper case):

The no. of characters in second argument:

5B Describe the purpose of the following utilities: cut, find and tee

5C Which of the following sed command:

1. Deletes only lines that contain at least one non-digit of a file called tfile.txt
   a. sed 's/^[!0-9]*$//' tfile.txt
   b. sed '/[^0-9]/d' tfile.txt
   c. sed '/![0-9]/d' tfile.txt
   d. sed 's/![0-9]\+//g' tfile.txt
2. Displays only the top 5 lines of file?
   a. sed -n -e '1,5 p' file
   b. sed -e '5 d' file
   c. sed -n -e '5 p' file
   d. sed -e '5 $' file

(5 + 3 + 2)

6A Write short note on the following awk programming terms:

(i) Pattern

(ii) Actions

(iii) Fields.

6B Given the data in a file called "student.dat", write the commands to:

a. Display the details of students who belong to Course codes C100 to C145

b. Count the number of students in course C125

c. Display the number of students whose attendance is greater than 75

d. Display student names in ascending order

e. Display student attendance in descending order

f. Store the student id and marks into another file student_marks.dat.

6C What is the output of this program? Explain.

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#!/bin/bash
for i in 2 3 7
do
        echo "Manipal"
done
exit 0
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(5 + 3 + 2)

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