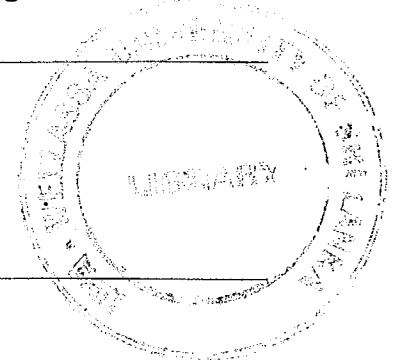


Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Department of Computer Science and Technology
400 level 1st Semester Examination – Jul./Aug. 2016
IIT476-3 System Administration and Maintenance



Instructions to candidates

Duration: Three (03) Hours

Number of questions: Six (06)

Answer all questions

Mark allocation: 100

1.
 - a. When you are installing Linux, name and describe the recommended partitions those you have to create. (7 mark)
 - b. If the Random Access Memory (RAM) size is 2 GB, calculate the size of 'SWAP'. (2 mark)
 - c. Briefly explain the term 'Boot Loader' (2 mark)
 - i. Name two (02) boot loaders. (2 mark)
 - ii. Describe one (01) of the boot loaders that you have mentioned in above part (i). (3 mark)
 - d. List and describe three (03) activities, performed by a system administrator when a user resigns from an organization and no longer has access to the system. (6 mark)
 - e. The root account does need a password and extra care should be taken to safeguard it. Explain three (03) situations/scenarios where the root password should be changed. (3 mark)

2.
 - a. What is meant by 'kernel' in LINUX operating system. (3 mark)
 - b.
 - i. Name the two (02) major types of shells included in UNIX and briefly describe them. (6 mark)
 - ii. What is the purpose of using a shell in UNIX operating system. (2 mark)

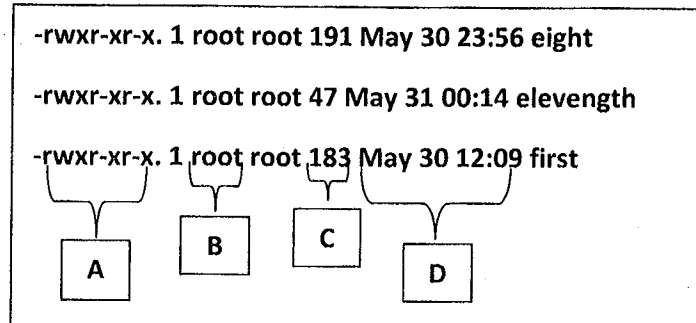
- c. Bootstrapping is the standard term for 'starting up a computer'. Write four (04) activities carried out during the bootstrapping. (4 mark)

3. Following questions are based on basic CentOS commands.

- a. What is the command to get help on 'ls'? (1 mark)
b. Briefly describe 'touch' command. (3 mark)
c. Following is a line in the output of 'ls -l' executed on a directory.

```
-r----- 1 nihal staff 112 2016-07-04 09:45 exam-paper.txt
```

- i. Who is the owner of the above exam-paper.txt file? (1 mark)
ii. What is the command that should be used to assign the given permission status. (2 mark)
iii. Can the user 'Lal' read the contents of the file? Explain your answer. (2 mark)
iv. Can the user 'Lal' delete the file? Explain your answer. (2 mark)
d. Following is the output generated by 'ls -l' command. Identify and name the components marked as A, B, C and D (4 mark)



4. Write short notes on following.

- a. XWindow System (3 mark)
b. Linux File System (3 mark)
c. Redundant Array of Independent Disks (RAID) (3 mark)
d. Domain Name System (DNS) server (3 mark)
e. Shell Script (3 mark)

5. Following questions are based on shell scripts.

- a. If the name of the shell script is 'myScript' name the necessary steps to execute the above script. Write the steps in proper order. (2 mark)
- b. Complete the following code by inserting correct words in the blank spaces and write the output. (5 mark)

```
num1=0
num2=___
echo -n "Enter the first number: "
read num1
echo -n "Enter the second number: "
___ num2
echo "First number + ___ = $(( num1 + num2 ))"
___ " First number - Second number = ___ (( ___ - num2 ))"
echo " _____ = $((num1 * num2 ))"
```

- c. Write a shell script to get the total number of arguments that the user has entered and to print each and every argument separately. Sample output of a similar program is given below. (4 mark)

```
[root@localhost] #./eight UVA Wellassa
Total number of command line arguments are = 2
./eight is the script name
UVA is the first argument
Wellassa is the second argument
All arguments are UVA Wellassa
```



- d. Write a shell script to convert given time in terms of seconds as an argument, into hours, minutes and seconds format. [HH: MM: SS] (4 mark)

6.

- a. Briefly explain the term 'Web Server'. (3 mark)
- b. Name one (01) proprietary and one (01) open source web server. (2 mark)
- c. Compare and contrast the above two web servers written in part (b). (10 mark)