

Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Department of Computer Science and Technology
400 level 1st Semester Examination – May/July 2017
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 the recommended partitions that you have to create. (6 mark)
 - b. If the Random Access Memory (RAM) size is 3 GB, calculate the size of 'SWAP'. (2 mark)
 - c. Briefly explain RAID 0 using a diagram. (4 mark)
 - d. Name two (02) boot loaders. (2 mark)
 - e. 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)
 - f. What is meant by 'kernel' in LINUX operating system? (2 mark)
 - g. 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. Write CentOS commands to do the following tasks.
 - i. To get the help on 'ls'. (1 mark)
 - ii. To display the content of a file named 'document.txt'. (2 mark)
 - iii. To get the last seven (07) lines of 'myFile.txt' file. (2 mark)
 - iv. To create a directory named 'myFolder'. (1 mark)
 - v. To create a file named 'Example.txt'. (1 mark)
 - vi. To get a list of hidden files and folders. (2 mark)
 - vii. Copy the file named 'salary.txt' in to 'Staff' directory which is inside 'home' directory. (2 mark)
 - b. After you have typed some text in an editor, you press the Esc key and :wq. What does this :wq do? (2 mark)
 - c. To redirect the output of the ls -l command to a file named 'output.txt'. What is the command you have to type. (2 mark)



3. Following is a line in the output of 'ls -l' executed on a directory.

-r----- 1 nihal staff 112 2017-06-04 09:45 exam-paper.txt

- i. Who is the owner of the above 'exam-paper.txt' file? (1 mark)
- ii. What is the size of the file? (1 mark)
- iii. What is the command that should be used to assign the given permission status. (2 mark)
- iv. Can the user 'nihal' add new content to the exam-paper.txt file? Explain your answer. (3 mark)
- v. Can the user 'gayan' delete the exam-paper.txt file? Explain your answer. (3 mark)
- vi. To grant read(r), write(w) and execution(x) permission to group, what is the command you have to enter? (3 mark)
- vii. To grant only the read permission to the others, what is the command you have to use? (2 mark)

4. Write short notes on following.

- a. X Window System (3 mark)
- b. Linux File System (3 mark)
- c. Boot loader (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 'firstScript', list 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.

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

(3 mark)

- 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.

```
[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
```

(5 mark)

- d. Write a shell script to get the following output using for loop.

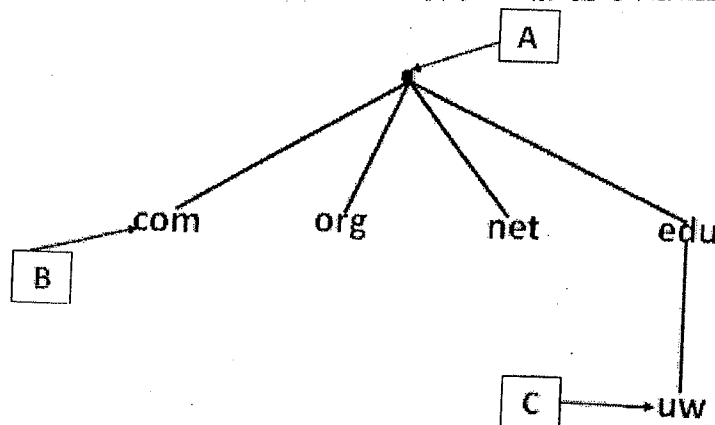
```

      *
    * *
  * * *
* * * *
* * * * *
```

(5 mark)

6.

- a. Briefly explain the term 'Web Server'. (3 mark)
 b. Name one (01) proprietary and one (01) open source web servers. (2 mark)
 c. Differentiate the above two (02) web servers written in part b. (7 mark)
 d. Following is a DNS hierachy. Name the components marked as A, B and C.



(3 mark)

