

EGERTON



UNIVERSITY

UNIVERSITY EXAMINATIONS

NJORO CAMPUS
SECOND SEMESTER 2011/2012

SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
IN COMPUTER SCIENCE

COMP 203: UNIX AND PROGRAMMING

STREAM:

TIME: 2 HRS

DAY: WEDNESDAY 8,30 -11.30AM

DATE: 25/04/2012

INSTRUCTIONS

1. QUESTION IS COMPULSORY
2. ATTEMPT ANY OTHER TWO TO MAKE THREE
3. BEGIN EACH QUESTION ON A SEPARATE PAGE

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Why is Unix considered to be a multi user operating system? [4 marks]
- b) What command would you use to know the persons currently logged into a Unix system? [1 mark]
- c) You have been asked to create two sub-directories, say 'MY_FAVOURITE' and 'THE_FLASH', under in your home directory. How would you do this? [2 marks]
- d) Give a command that would enable you to enter the sub-directory 'MY_FAVOURITE'. [1 mark]

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- e) Imagine that only the people in FINANCE department are allowed to access data in files belonging to that department. At some point a user who was in that department, KORIR, is transferred from that FINANCE department to CURRENT AFFAIRS department. He will then belong to a different department, how would you change the permission settings so that KORIR cannot be able to access the files in the FINANCE department? [6 marks]
- f) Briefly explain how the Unix file system is structured. [4 marks]
- g) As a Unix expert, you have been asked to give a small brief on the importance of directories. What would include in your brief? [3 marks]
- h) How would you use the echo command to display a prompt to the user enter his/her name? [2 marks]
- i) Write Script to see current date, time, username, and current directory. [4 marks]
- j) You have some files in the system that have been archived as a package. Your boss would want to check if any of those files contains data to do with "MAU FOREST". Explain how he can get this information [3 marks]

QUESTION TWO [20 marks]

- i. Why is it necessary that Unix redirection commands are used in Unix system? [2 marks]
- ii. Supposing a user would want to run a command so that its output is saved in a file, what command(s) would he/she use? [2 marks]
- iii. What if, in 2(ii), the user would want to have the command(s) be read from a file, what command(s) would he/she need? [2 marks]
- iv. Imagine after issuing the command "`cat > myusers`" you have a screen which looks like the one below:

```
Korir pts/0 2012-05-03 10.30 172.16.85.3
```

```
Caroline tty1 2012-05-03 09.00
```

Explain what would happen to the file, myusers, if the following command is to be issued repeatedly three times "`cat >> myusers`" [2 marks]

- v. Write a shell script that will be used as a user interface that allows a user to select from two options, "New" and "Quit". If the user chooses the New option, the system should display the message "Welcome the new user" else the system should display the message "done" and exits. If not any of the options it should clear the screen and outputs "bad option" [6 marks]
- vi. Write a shell script in UNIX that prints the current date, your username and the name of your login shell [6 marks]

QUESTION THREE [20 MARKS]

- a) Differentiate between the following program control structures
- i. Sequential
 - ii. Selection
 - iii. Repetition [@ 2 each =6 marks]
- b) Consider the following program written in bash shell

```
#!/bin/bash
echo "Enter a number"
read number
initial=1
while [ $initial -le $number ]
do
    echo "the square of $initial is $((initial*initial))"
    let initial=initial+1
done
```

- i. Rewrite the program using a for loop. [7 marks]
- ii. Rewrite the program using Until loop. [7 marks]

QUESTION FOUR [20 MARKS]

- a) What do you understand by a variable? [3 marks]
- b) Explain how a read command works when used in a shell program.

[4 marks]

- c) Write a shell program that is to be used to prompt a user to enter his/her name, address and phone number. [3 marks]

The program output has been decided by the management that it should be as shown below:

Hello -----(name) [2 marks]

Your address is -----(address) [2 marks]

Your phone is -----(phone) [2marks]

Other people who are logged in are -----(list of users) [2 marks]

Your current directory is -----(directory). [2 marks]

Include statements and commands in your program that can be used to actualize this output.

QUESTION FIVE [20 marks]

- a) Name two information which must be provided before you log on to a Unix system. [2marks]

- b) Imagine you are to give instructions on how a certain file is to be created and saved in your current working directory using Vi editor to contain a C program. What would you include as part of your instructions? The file name is to be called myfirst.c. [3 marks]

- c) Supposing the access permissions for some file, Comp203_Lecture_Notes is shown as -rwx rwx rwx among other details. Explain what this means. [5 marks]

- d) By use of mnemonics code, explain how you can change the permissions so that it is only the owner who can read and execute the file, while the rest are only permitted to write to the file. [4 marks]

- e) For question 5(d), use the Octal computations. Show and explain all your workings. [6 marks]
