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MAIN EXAMINATION

JANUARY – APRIL 2019 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER AND LIBRARY SCIENCE

REGULAR PROGRAMME

CMT 203: INTRODUCTION TO SYSTEMS ADMINISTRATION

Date: APRIL 2019	**Duration: 2 Hours**
INSTRUCTIONS: Answer Question ONE and any other TWO Questions	

Q1. a) Draw a well labeled diagram of a Linux architecture **(4marks)**

b) Define a shell, stating two shells available in Linux **(3marks)**

c) Explain two Linux commands for changing the file and directory ownership with an example implementation of the commands **(4marks)**

d) Explain the terminology “Pipelining” as used in Linux with an example **(2marks)**

e) Write the Linux commands to perform the following tasks

1. Commands to enable and disable the network interface **(2marks)**
2. Configure the IP address of a PC to 192.168.1.2 and netmask 255.255.255.0 **(2marks)**

f) Explain the function of the following Linux commands as used in system administration.

i) fsck **(2marks)**
ii) rpm –qa **(2marks)**
iii) renice **(2marks)**

g) Write a Linux system control command to inform the user that the system is going down for maintenance and shutdown the system shutdown at 6:45PM **(2marks)**

h) You have been hired by a local Small Micro Enterprise organization as their System Administrator. Outline file essential tasks you are supposed to perform on daily basis as a system administrator **(5marks)**

Q2. a) Write the Linux command to do the following task

i) Create a user called “Dan” and a group called “cmt203” and Alice as a member of the group sales **(3marks)**

ii) Delete the user Dan created in a(1) including the home directory **(2marks)**

b) Explain the role of the following commands in a Linux environment(2MKS)

i) !!

ii) History -c

c) Distinguish between “zombie” and “orphan” processes **(4marks)**

d) Explain the function of the following Linux commands **(4marks)**

a) Finger
b) traceroute
c) Kill
d) Killall

e) State the role of a DHCP server in a network environment **(2marks)**

f) State the reason why it is not advisable to log in as root in Linux environment. How then should you log in? **(3marks)**

Q3. a) Outline five skills that are required for a system administrator

(5marks)

b) Explain the purpose of the following environmental variables as used in Linux **(5marks)**

i) $BASH
ii) $PATH
iii) $HOME
iv) $HOSTNAME
v) $SHELL

c) Distinguish between the following Linux/Unix commands.

i) ls -l and ls –a **(2marks)**

ii) rm –R and rm –I **(2marks)**

iii) cd ~ and cd- **(2marks)**

d) State the path for the files that are used to do the following in a Linux system **(4marks)**

i) Read GRUBS default boot configuration
ii) Editing network interface configurations

Q4. a) Distinguish between the following terminologies as used in Linux

i) Sudo and Visudo **(2marks)**
ii) Relative path and absolute path **(2marks)**
iii) / and root **(2marks)**

b) Illustrate with an example how to use the alias command in Linux and demonstrate how to remove the alias. **(2marks)**

c) Outline any three careers in Linux system administration **(3marks)**

d) Write Linux commands to do the following;

i) Display the system date and time on the console screen **(2marks)**

ii) Display the calendar for year 2010 and redirect it to a text file called mycalender **(2marks)**

iii) It should display the long list of the present working directory and append the output to the file in f (ii) **(2marks)**

e) Explain three types of computer files permissions that can be assigned to the users **(3marks)**

Q5. a) "In Linux, everything is a File". Describe three types of files in Linux **(6marks)**

b) Write the Linux command to perform the following actions

i) Create a backup named backup, for a user called Emmy using the tape archive command. **(3marks)**
ii) Delete the users'Emmy directory using the relevant Linux command interactively **(2marks)**
iii) Restore the backup created in b (i) **(2marks)**
iv) Display the last three lines of the file /etc/cups/printers.conf **(2marks)**
v) Display the contents of the file /etc/cups/printers.conf **(1mark)**

c) Distinguish between /etc/passwd and /etc/shadow files as used in Linux system **(4marks)**

END