



College of Business Peace leadership and Governance

CSC 410 Systems Administration

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER/DECEMBER 2018

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DURATION: (3 HRS)

INSTRUCTIONS

1. ANSWER **ANY FOUR** QUESTIONS

2. START EACH QUESTION ON A FRESH PAGE

Question one

- a) Outline key events that lead to the birth of Linux operating systems [5]
- b) How does Linux differ from Windows? [4]
- c) Briefly describe any three functions of the X server [3]
- d) Outline the architectural diagram of the X window system architecture [9]
- e) What are the functions of the window manager on an X client application [4]

Question two

- a) Suppose you forgot your root password, outline the steps that you would follow in order to reset your root password [5]
- b) How do you log on as a super user [2]
- c) Suppose during installation the configured language was the American English language, outline all the steps you would take change it to Great Britain English language [4]
- d) Distinguish clearly between absolute pathnames and relative pathnames [2]
- e) Copy and complete the following table [6]

Permission	Meaning for a regular file	Meaning for a directory
r(read)		
w(write)		
x(execute)		

- f) Using chmod, create the following sets of access permissions, in turn, on the file sample.
 - I) rw-----
 - II) rw-rw-rw
 - III) rwxrwxrwx [6]

Question three

- a) With an aid of a diagram briefly describe the standard input and output stream of the Linux client server architecture [6]
- b) Using pipelines, devise commands to answer the following:
 - i. How many processes are there altogether? [2]
 - ii. How many processes are owned by root? [2]
 - iii. How many processes are *not* owned by root? [3]
 - iv. Which of root's processes is using the most memory? (Your pipelines should just display the line describing this process) [3]
- c) Issue commands that does the following
 - I) Display the first 10 lines of the file /etc/sysconfig/network/config [2]
 - II) Display the first 20 lines of the same file [2]
 - III) Show the last line (only) of the same file [2]
 - IV) Search /etc/sysconfig/network/config for the string FIREWALL [3]

Question four

a) Given the following files and directories

410-chap1.doc	intro.old
410-chap2.doc	meetings.June
410-chap3.doc	meetings.July
410-chap4.doc	meetings.Aug
410-chap5.doc	oldstuff
410-CHAPS.doc	opensource
display	openwindows
display.c	project6
display.h	project45
display.object	project46
ideas	project346
ideas.old	training
ideas.older	venues
index	windows
intro	x-windows

A directory

What would be the output of the following commands

- I) `rm *.old` [2]
 - II) `ls -l 410-chap?.doc` [2]
 - III) `less 410-chap[2-5].doc` [2]
 - IV) `mv ideas* training` [2]
 - V) `mv ideas.* training` [2]
 - VI) `rm *old*` [2]
- b) Issue commands to perform the following tasks [6]
- I) Copy all the files whose name ends in `.conf` from `/etc` to your config directory
 - II) Change the access permissions of all files in your config directory to be `"rw---"`
 - III) Delete any files in your config directory whose name begins with a vowel
- c) Briefly describe the three working modes of `vi` [6]
- d) Clearly distinguish between soft links and hard links [1]

Question five

```
#!/bin/bash
echo "Please enter a value"
read THEVALUE
echo $THEVALUE
```

- a) Modify the above script to prompt for and read in the user's first name and last name. (Prompt for and read each name separately and store the names in two separate variables.) Then print a greeting using the user's full name [6]
- b) Write a shell script that implement the below pseudocode [12]
1. *Read the user's date of birth in the format YYYY-MM-DD*
 2. *Get today's date in the same format*
 3. *Strip the YYYY- component from both dates, leaving MM-DD*
 4. *If the birthdate matches today's date*
 5. *Print "Happy birthday"*
 6. *Set a return status of 0 (true)*
 7. *Else*
 8. *Set a return status of 1 (false)*
 9. *Exit with the appropriate return status*
- a) Write a script that takes a single file name argument from the command line and outputs a message to say if the file exists or not [7]

END OF EXAMINATION