Introduction

This file contains the actual test questions. That is, this is not a study guide and these are not review questions, these are the actual test questions. I suggest that you use this sheet to prepare your answers for the test questions before you start the test in Canvas. I know this is probably much different than what you're used to as in most classes you don't get to see the test questions until you start the test. I think the reason for this is that most instructors have never held jobs outside of academia so they don't have any idea how the real world functions. In any case, I provide you with the questions ahead of time because as you will see it may take you a significant amount of time to answer all of the questions and do the hands-on work. If you had to actually open the test in Canvas to see the questions it would be difficult to complete all of the test questions in one session. And if you lost your internet connection, or needed to shut down your computer, or needed to move to a different location, your test would close. So … you can use this file to prepare your answers, and then once you're ready open the test and simply input or upload your answers.

Instructions

As you go through the test questions please keep in the mind the following:

1. You must enter your answers to these questions in Canvas to receive credit.

2. You must do your own work. You can use resources such as books or Internet research, but you can NOT collaborate with other students. Any collaboration will be a violation of the CBC Academic Honesty Policy and will result in a grade of 0 for the course. In addition, you will be referred to the CBC Dean of Student Services for possible administrative consequences.

3. Be wary of using the Internet to find your answers. You can use the Internet for research, but you really should avoid just typing in a test question and entering whatever you find on the Internet as your answer without first trying to understand it yourself. In most cases the answers you'll find on the Internet may be correct, but they will be way more complicated than they need to be. And this will make it obvious that you don't really know the answer, you just know how to spell Google. For example, in the past I used a test question that asked about searching for a string in a set of files. The answer was something like `grep banana /home/tests/.dat`. The question was designed to assess whether the students could use grep to search for strings in a file, and was simple to answer if you knew how to use `grep`. Apparently if you asked the Internet how to do this the answer provided was `find ./home/tests -type f -name .dat -exec grep "banana" {} \;` This second answer does work and produce the same results as the first answer. But it's also obvious that anyone using this answer doesn't really know how to use `grep`. To handle this situation the grading rubric for some questions is set up so that you can only get full points by providing the simple answer. If you provide a complicated answer that may be technically correct, but is also far more complicated than necessary you will only receive partial credit.

4. When you are asked to enter a command that requires root privileges assume that you have root privileges unless otherwise specified. That is, if an answer requires root privileges do NOT add `sudo` to the start of the command(s).

5. There are several questions that require you to enter what command(s) you would type or use to accomplish a given task. Canvas is very picky when it checks your answer against the correct answer so when you enter your answer you must follow these rules:
    a. Enter the answer in the proper case.
    b. Do not include any white space characters before or after your answer.
    c. Only use a single space between words. Do not use multiple spaces or tabs.
    d. Make sure and include all necessary command arguments and options. Do not include unnecessary arguments or options.
    e. If there are multiple command options enter them in alphabetic order.

For example, if the answer to the question is `ls -al /var/www` the following answers would be **incorrect**:

a. `Ls -al /var/www`   (the l in ls is upper case)
b. `ls al /var/www`   (the – before the command options is missing)
c. `ls -a /var/www`   (the l option is missing)
d.   `ls -al /var/www`   (there is a space before the ls command)
e. `ls -al  /var/www`   (there is an extra space between the –al and /var/www)
f. `ls -la /var/www`   (the –la options are in the wrong order)
g. `ls -alr /var/www`   (the –r option is extraneous)

If you fail to follow any of these rules Canvas will mark your answer as incorrect, so double check your answers before submitting.

Questions

1. This is a "real" test, which means you must do your own work. It's an open book test, so you can use any resources such as books, your notes, or the computer. However, you must do your own work. This means that you must not ask other students, instructors, acquaintances, paid consultants, Facebook friends, etc. for help. Any violations of the CBC Academic Honesty Policy will result in a failing grade for the course. If you use any Internet resources, make sure that you do NOT copy and paste information. You can use the Internet, but you must put all answers in your own words. You will receive no credit for any answers with copied material.

The test must be completed and turned in by 11:59 on the due date to receive full credit. Late tests will be accepted up to 7 days past the original due date, but there will be an automatic 10% penalty.
I have read and understand the test policies.

2. Assume that you are hired as the Network Administrator for a small company. The 4 current employees have 3 Windows computers and 1 Mac computer. However, the business is growing and hiring 10 more employees. The business owner wants to set up file and print sharing for the employees, and set up a web server to sell their products on the Internet. Would you suggest implementing a Windows based network server or a UNIX/Linux based network server? Of course you must explain your suggestion if you want to receive full points for this question.

3. True or False. It would be difficult for a user to tell the difference between a UNIX server and a Linux server if all they were doing was typing commands.

4. True or False. The Courts in the United States have determined that UNIX and Linux are the same thing as far as Intellectual Property rights are concerned.

5. When you connect to the UNIX server and run a UNIX command such as ls, where does the code for the ls command run, on your PC, or on the UNIX server?
A. UNIX Server
B. PC

6. DOS has a tree structured file system for every logical disk. What is the maximum number of tree structures or top level directories in the Linux/UNIX file system ?
A. 1
B. 1 for every physical drive
C. 1 for every drive partition or physical drive
D. 1 per device (drive, optical disk, thumb drive etc.)

7. What key(s) or character(s) do you have to use to get out of the `man` page utility?
A. exit
B. x
C. q
D. Q

8. What will be returned if you type: `apropos delete user`
A. Every man page that has the word delete OR the word user
B. Every man page that has the words delete AND user. Either word can be anywhere on the line.
C. Every man page that has the exact phrase "delete user". The words must be in that order, with just one space between them.
D. A portal to another dimension will open

9. What would you type to see *all* the files in the current directory?

10. Assume you are in your home directory. What UNIX command do you use to see a listing of *all* the files in the directory `/usr/lib` ?

11. While a directory may seem empty because it doesn't contain any files or sub-directories, you will always see two items if you use the command to see all files. What are the names of these two items, and what are they?

12. What you would type on the command line to move to the directory above the current directory?

13. What you would type on the command line to move to your home directory?

14. What you would type on the command line to move to the directory `/etc/rc.d` ?

15. What you would type on the command line to move to a subdirectory of the current directory named `junkDir`? (You can assume that `junkDir` exists.)

16. What is wrong with `cat`? That is, why do you typically use `more` or `less` instead of the `cat` command?
A. It only works on files that have 10 or fewer lines.
B. It only works on files that have lines that are 40 characters or less.
C. It only works on files that have an extension of ".txt"
D. The `cat` command sends the entire file to the display. This makes it cumbersome for files that are longer than a single screen.

17. In WinSCP, which protocol should be used to connect to the CBC UNIX server?
A. FTP
B. SFTP
C. SFTP (allow SCP Fallback)
D. SCP

18. True or False. UNIX same system as Windows to determine file type. That is each must have a 3 letter file extensions such as .exe, .doc, .jpg etc.; and the OS uses the extension to determine what type of content is contained in the file.

19. When you use the DOS COPY command you can assume many defaults. In fact you can leave the name of the destination blank, and DOS will assume that the destination is the current directory. Will the UNIX `cp` command work if you leave the destination blank?
A. Yes. The `cp` command will assume you want to copy to the current directory.
B. No. You must specify a destination.

20. What is the difference between `rmdir` and `rm -r` ?
A. The `rmdir` command will recursively delete any sub-directories and files while `rm -r` will not.
B. The `rm -r` command will recursively delete any sub-directories and files while `rmdir` will not
C. There is no difference, neither will recursively delete any sub-directories and files
D. There is no difference, both will recursively delete any sub-directories and files

21. When you delete a file using `rm`, how do you get it back out of the trash if you change your mind?
A. Go to the trash folder in your home directory and move or copy the file.
B. Use the `undelete` utility
C. Run `rm -recover filename`, where filename is the name of the file you want to restore
D. There is no trash and no way to recover the file without using special recovery software.

22. Why can't normal users, that is a user that is NOT an admin or superuser, change their user id (uid)?
A. They CAN change it by using the `usermod` command
B. The uids must be assigned in sequence, and only the admin knows which uid should be the next to use
C. This would cause security issues as any user could impersonate any other user by simply changing to their uid
D. The user may try to use a uid that has already been assigned and this would cause the OS to crash.

23. Explain the difference between how `umask` and the `chmod` command affect your permissions?
A. There is no difference
B. The `umask` command only affects files that already exist, while `chmod` changes your default permissions
C. The `chmod` command only affects files that already exist, while `umask` changes your default permissions
D. The `umask` command only works in symbolic mode, while `chmod` only works in binary mode
E. The `umask` command sets permissions for directories, while the `chmod` command sets file permissions.

24. Can you set your default file permissions to 644 and at the same time have your default directory permissions set to 744? Why or why not?

25. Say you had a file named `q19` that had permissions of `-r-xr-x---` What command would you use if you wanted to change permissions on `q19` to `-rwxr--r--` (You must include the command name and all of the arguments to the command. You must also use the numeric mode for the permissions, not the symbolic mode.)

26. Say you have a subdirectory named `testsub`, which has permissions of `drw------` Also assume that there was a file in `testsub` named `testfile` that had permissions of `-rwxrwxrwx`. Would you be able to see details such as the file permissions for testfile if you ran `ls -al testsub`?
A. Yes
B. No

27. Say you have a subdirectory named `testsub`, which has permissions of `drw------` Also assume that there was a file in `testsub` named `testfile` that had permissions of `-rwxrwxrwx`. Would you be able to `cat testfile`?
A. Yes
B. No

28. Say you have a subdirectory named `testsub`, which has permissions of `drw------` Also assume that there was a file in `testsub` named `testfile` that had permissions of `-rwxrwxrwx`. Would you be able to execute `testfile`?
A. Yes
B. No

29. Say you have a subdirectory named `testsub`, which has permissions of `drw------` Also assume that there was a file in `testsub` named `testfile` that had permissions of `-rwxrwxrwx`. Would you be able to `cd` into `testsub`?
A. Yes
B. No

30. Which of the following is **NOT** a requirement for making your `umask` changes permanent?
A. You must add the source .login command to your startup script
B. The `umask` command must be in your .login file
C. The .login file must be in your home directory
D. You must have read and execute permissions on your .login file

31. Users with an account on a UNIX system can edit some of their own information in the `/etc/passwd` file, even though they do NOT have write permission.
A. True
B. False

32. Assume you are in `vi` in command mode. What happens if you hit the `i` key?
A. You will change to input/insert mode and the cursor will move to the beginning of the current line.
B. You will change to input/insert mode and the cursor will move to the end of the current line.
C. You will change to input/insert mode and the cursor will move to the right of the current character.
D. You will change to input/insert mode and the cursor will stay where it is.

33. Assume you are in `vi` in command mode. What happens if you hit the `A` key?
A. You will change to input/insert mode and the cursor will move to the beginning of the current line.
B. You will change to input/insert mode and the cursor will move to the end of the current line.
C. You will change to input/insert mode and the cursor will move to the right of the current character.
D. You will change to input/insert mode and the cursor will stay where it is.

34. In `vi`, what key(s) do you hit to change from input/insert mode to command mode ?
A. i, a, I, A, etc.
B. <ctrl-x>
C. <ctrl-q>
D. <esc>

35. Assume you are in command mode. What the vi command(s) would you use to delete or cut the current line?

36. Assume you are in command mode. What the vi command(s) would you use to replace the current character?

37. Assume you are in command mode. What the vi command(s) would you use to force vi to quit w/o making any changes, even though you have edited the contents of the buffer
A. :q
B. :q!
C. :x
D. :x!

38. Assume you are in command mode. Write the command you would use to have vi display line numbers.

39. Assume that you are in vi. What would you expect to happen if you typed the following?

`<esc>:-5,+5 s@^tony@Tony@`
(You should be able to look at this and determine what will the command is saying. If you want to test this you will should create a text file with at least 20 lines, and put the word "tony" on every line. Some of the lines should have "tony" as the first word on the line, but it should not be the first word in other lines. Position yourself about halfway through the file before running the command.)

40. This question requires you to perform the following hands-on tasks on your account on the CBC Linux server. Make sure and follow the instructions very carefully, especially the last instruction. I will only check for a file named "all.done", so if you name your file something else you will not receive credit for this question.

Also remember that if the Linux server supports FTP (WinSCP), you can always move the file to your Windows PC or Mac, perform the tasks, then copy the file back to the Linux server.

A. Copy the file /home/test2.txt to your home directory.
B. Remove all of the tab (^I) characters. (Hint: it may be easier to do this if you can see the tabs.)
C. Edit the file and add two lines at the top of the file which contain your name (on the first line) and the "Geek In Training" (on the second line).

D. In the first 30 lines, change all occurrences of the phrase "WWW" to the phrase "Santa Claus is coming to town".

E. From line 30 to the end of the file change all occurrences of the phrase "WWW" to the phrase "Que pasa".
F. Add the line "FIN" to the end of the file.
G. Save the file with the name: all.done

41. This question requires you to perform the following hands-on tasks on your account on the CBC Linux server. Make sure and follow the instructions very carefully, especially step 2. I will only check for a file named "executeTest", so if you name your file something else you will not receive credit for this question.

A. Create a file on the PC (use any editor), which contains the following two lines:

    echo "I love UNIX"
    date

B. Save the file as plain text with the name: executeTest

C. Move the file to your account on the UNIX system

D. Give yourself, your group, and the world execute permissions. You can add other permissions if you wish. (Hint – to test this try running the file by typing ./executeTest. If you get the "Permission Denied" error message then something is wrong. If you see "I love UNIX" followed by the current date then you have execute permission.