CENTRAL UNIVERSITY

SCHOOL OF ENGINEERING & TECHNOLGY

END OF SECOND SEMESTER EXAMINATION – 2020/21

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

COURSE CODE:ITEC 308

UNIX/ LINUX SYSTEMS ADMINISTRATION

BSC INFORMATION TECHNOLOGY

2 Hours

STUDENT INDEX No ....

INSTRUCTIONS

- Answer **all** Questions in section **A**

- Answer **any three (3)** Questions in **Section B**

Answer questions in **section A** on the **Question paper** and
Section B on the **Answer booklet**

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Course Lecturer: Mr. J. K. Appiah

1. In which directory are you most likely to find software from third-party publishers?

    a) /usr/local
    b) /var/lib
    c) /usr/third
    d) /opt

2. The fourth stage of the boot process is:

    a) The init phase
    b) The Bootloader (LILO/GRUB) stage
    c) The firmware (BIOS/UEFI) stage
    d) The kernel

3. You can display current filesystem space usage with the _____ command.

    a) du
    b) ls
    c) dw
    d) df

4. In what directory are you most likely to find user's home directories?

    a) /usr/local
    b) /home
    c) /var/lib
    d) /usr/third

5. Which command is used in order to view the manual page for a topic?

    a) show
    b) man
    c) help
    d) doc

Look at the result below and answer the following three questions.

```
-rw-r--r-- 2  tb00029  staff 74  Dec 26 16:50 a
-rw-r--r-- 1  tb00029  staff 0  Dec 26 16:50 b
drwxr-xr-x 2 tb00029  staff 512  Dec 26 16:50 c
-rw-r--r-- 2 tb00029  staff 74  Dec 26 16:50 d
lrwxrwxrwx 1 tb00029 staff 1 Dec 26 16:51 e -> c
```

6. Which command may have produced these lines?
(a) ls -l

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, ls -al

c) ls -pl

(d) ls -pe

7. Which run level number defines multi-user with no networking services?

    a) 3
    b) 1
    c) 5
    d) 2

8. The third stage of the boot process is:

    a) The kernel phase
    b) The init phase
    c) The firmware (BIOS/UEFI) stage
    d) The Bootloader (LILO/GRUB) stage

9. Applications communicate with kernel by using:

a) System Calls

b) C Programs

c) Shell Script

d) Shell

10. User's Primary Group id is listed in which file, at the time of creation of the user (On a standard Unix system)

a) /etc/passwd

b) /etc/groups

c) /etc/login

d) /etc/profile

11. Which command is used to bring the background process to foreground?

a) bg

b) fg

c) background

d) forground

12. Which command can be executed by a user who is already logged into the system, in order to change to the root user? (type the command without any parameters)

a) su

b) root

c) chroot

d) user

13. Process information in the current shell can be obtained by using
a) kill
b) bg
c) fg
d) ps

14. Which file contains the filesystems to be automatically mounted during boot?
a) /etc/mount
b) /etc/fstab
c) /etc/inittab
d) /etc/boot

15. ____ is a directory (which should exist), on which to mount the file system?
a) Root
b) Boot
c) Mount-point
d) Partition

16 Which command is used to change permissions of files and directories?
a) mv
b) chgrp
c) chmod
d) set

17. Which command is used to close the vi editor?
a) q
b) wq
c) both q and wq
d) none of the mentioned

18. The file permission 764 means:
a) Every one can read, group can execute only and the owner can read and write
b) Every one can read and write, but owner alone can execute
c) Every one can read, group including owner can write, owner alone can execute
d) Every one can read and write and execute

19. A user does a chmod operation on a file. Which of the following is true?
a) The last accessed time of the file is updated
b) The last modification time of the file is updated
c) The last change time of the file is updated
d) None of the mentioned

Which of the following server is used with the BIND package?

a) httpd
b) shttp
c) dns
d) named

A system Administrator
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Section B

Answer any 3 questions from this section

Question 1

A. Explain the Linux boot process   (10 marks)

B. List and explain the Linux run levels   (6 marks)

C. List four roles / functions of a systems administrator   (4 marks)

Question 2.

A) Describe the file system in Linux   (4 marks)

B) Write shorts notes on   (8 marks)
      i) shell -

      ii) daemons

      iii) Free and Open source software

      iv) LILO

C) What are the different modes when using vi editor?   (6 marks)

D) A Linux systems administrator wants to assign a Read, Write, Execute permission to the owner and group on the file /bin/splace. Write a linux command to achieve this objective.   (2 marks)

Question 3

A). What is the normal difference between a shell prompt which ends with the character '#' and one which ends with a different character (like '%' or '$' for instance)?   (4 marks)

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B) A system Administrator needs to create a user account for a new employee, Martin, who is a member of the group frontdesk (gid 38). Also user frank is in group smith (gid 47). He has changed jobs and now has to be in group 50.

Write the linux commands to create account for Martin, remove Frank from group 47 and insert him into group 50   (4 marks)

c. What is the purpose of the following directories   (8 marks)

    i.   /bin
    ii.   /home
    iii. /etc
    iv. /boot

D) Assume you are in your home directory (which is below /home on your system) but wish to move to the grub2 directory which is a subdirectory of boot which is a subdirectory of root. Give the command to do this using relative pathing: (2 marks)

E) Assuming you have separate files called: file1 , program2 , and scriptC in your current directory, write a single command to put copies of each of these files in the directory: **allfiles** which is a subdirectory of your current directory   (2 marks)

Question 4

A. What is cron?   2 marks
B. write a crontab entries to run make command at 2:30 each Monday morning   4 marks
C. Give two (2) advantages of using the sudo command?   4 marks
D. What is the difference between UNIX and Linux? Are they the same thing or are they different?   2 marks
E. Give four (4) reasons to keep servers in a data center.   4 marks
F. Contrast the uses of MAC and IP addresses in the network process.   2 marks
G. List two reasons why backups are essential.   2 marks

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