UNIVERSITEITSEKSAMENS

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## ICT2631

May June 2017

## OPERATING SYSTEMS PRACTICE

Duration    2 Hours

100 Marks

**EXAMINERS**
FIRST                    MR DJ BISSCHOFF
EXTERNAL              PROF HS VENTER

Use of a non-programmable pocket calculator is permissible

Closed book examination

This examination question paper remains the property of the University of South Africa and may not be removed from the examination venue

This paper consists of 4 pages including this one

Instructions
Please answers all questions and in sequence
Please write legibly

[TURN OVER]

Question 1

1 1    What keystrokes are involved when switching between virtual consoles?    (3)

1 2    There are shells besides *bash* in existence   List three things that could motivate you to use a shell other than *bash?*    (3)

1 3    What is the function of the following keystrokes when editing the command line?

    a)    Ctrl-D    (1)
    b)    Ctrl-A    (2)
    c)    *Ctrl-F*    (1)
    d)    Ctrl-T    (2)

1 4    What command would you type at the command prompt if your goal was to

    a)    create a directory    (1)
    b)    change the current directory    (1)
    c)    list the contents of a directory    (1)

1 5    Give five redirection characters that may be used on the command line and state what their functions are respectively    (10)

1 6    Give the chmod command that will result in allocating rw-r--r-- permissions for a file called *results pdf*    (7)

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Question 2

2 1    Answer the following questions

    a)    What is the default prompt for a regular user?    (1)
    b)    Write the command used to display/print your current working directory    (1)
    c)    What command is used to rerun the previous command at the command prompt?    (2)
    d)    Which shell variable holds the path to your home directory?    (2)
    e)    To edit the sudoers file in order for regular users to access to the sudo command, the root user cannot use vi  Which command should be used to edit this file?    (1)
    f)    What is the content of the $# variable in a shell script?    (1)

2 2    Discuss the differences between the *su* and *sudo* commands  Write your answer in a way that makes it clear which attribute applies to *su* and which applies to *sudo*    (10)

2 3    The *updatedb* command usually runs once per day on a typical Linux system
    (a) What does it do?    (2)
    (b) Which command is it associated with?    (1)

[TURN OVER]

2 4    A file has permissions written as rwxr--r--   Write a command that uses letters (rather
       than numbers) to change the permissions to rw-rw-rw-                                    (5)

2 5    Write a command to copy all files from the current user's home directory that end in an
          's'  to the current directory                                                       (5)

2 6    Given the following, what does the final command (bg %1) achieve?                       (2)

       $ jobs
       [1] Stopped grep 'pass' /etc/ > passwords
       [2]+ Running nroff –man /usr/man4/* > /tmp/man4 &
       $ bg %1

                                                                                             [33]


Question 3

3 1    Discuss the command below in detail by referring to its function and options and
       switches used
       setfacl –m u bill rw /tmp/memo txt                                                     (6)

3 2    Assume a directory /tmp/mystuff and a file in it called *records txt* exist   Assume that
       you enter two commands at the command prompt in the following order
                 *chmod 1777 /tmp/mystuff*
                 *chmod 666  tmp/mystuff/records txt*

       Answer the following questions regarding these two commands
       a)       What permissions will apply to the directory *mystuff* after the first command is
                entered and executed?                                                          (5)
       b)       What permissions will apply to the file records txt after the second command
                is entered and executed?                                                       (3)
       c)       Who may delete the records txt file and why is it restricted?                   (3)

3 3    What information will you gather during your preparation to configure a Linux system
       that will authenticate against a LDAP server at some location?                          (4)

3 4    Briefly describe the *btrfs, swap,* and *nfs* file systems respectively                 (7)


                                                                              [TURN OVER]

3 5    Briefly explain the purpose of the following Linux commands                (5)
     a)       ls
     b)       grep
     c)       touch
     d)       passwd
     e)       nice


3 6    Briefly explain why LVM is advantageous?                                    (2)

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