



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE	
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DURATION: 3 HOURS	MARKS: 85

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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THIS QUESTION PAPER CONSISTS OF 3 PAGES

(Excluding this front page)

INSTRUCTIONS

1. Answer ALL the questions on the answer scripts.
2. Write clearly and neatly.
3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Calculator.

Section A: (Multiple choice)

[10 Marks]

Read each question carefully, and then select THE ANSWER that best fits the question

1. The dmesg command
 - a) Shows user login logoff attempts
 - b) Shows the syslog file for info messages
 - c) kernel log messages
 - d) Shows the daemon log messages
2. Which command is used to display the operating system name?
 - a) os
 - b) unix
 - c) kernel
 - d) uname
3. Which command is used to display the unix version?
 - a) uname -r
 - b) uname -n
 - c) uname -t
 - d) kernel
4. Which option of ls command used to view file inode number?
 - a) -l
 - b) -o
 - c) -a
 - d) -i
5. Which command changes a file's group owner?
 - a) cgrp
 - b) chgrp
 - c) change
 - d) group
6. Which command is used to extract a column from a text file?
 - a) paste
 - b) get
 - c) cut
 - d) tar
7. Which command is used to display disk consumption of a specific directory?
 - a) du
 - b) ds
 - c) dd
 - d) dds
8. Which command is used to perform backup in unix?
 - a) backup
 - b) cpio
 - c) zip
 - d) gzip
9. Which command creates an empty file if file does not exist?
 - a) cat
 - b) touch
 - c) ed
 - d) read
10. Which option of rm command is used to remove a directory with all its subdirectories?
 - a) -b
 - b) -o
 - c) -p
 - d) -r

Section B: True or False**[15 Marks]**

Read each statement below carefully and state whether it is false or true.

1. The kernel is the program acting as chief of operations.
2. Commercial vendors moved in Linux itself to provide freely distributed code.
3. Linux cannot be installed on a PC just having the bare minimum resources.
4. Each commercial vendor publishes a hardware computer list and makes it available on its web site.
5. User mode is the privileged mode in which the operating system's kernel operates.
6. You can kill zombies process with a kill command.
7. Only one unprivileged user may be logged into a Linux system at any given time.
8. Data is stored on a device so you can access the data by going into /dev.
9. Running the `gg &` command will bring a background job to the foreground.
10. You can install one or more applications by appending their name behind `apt-get install`.
11. Shell is the software that provides an interface for the user of an operating system which needs services of a kernel.
12. The `cut` filter can select columns from files, depending on a delimiter or a count of bytes.
13. The `wc` command is used to find out the number of users logged on.
14. Shell provides us with an interface to the operating system.
15. We can use the `>` symbol along with pipe in a command.

Section C**[60 marks]*****Answer all the questions in this section***

1. Write down the commands to perform the following:
 - (i) Check which group a user bob belongs to. [1]
 - (ii) Create a user called anna with /bin/tcsh shell, Anna Amutenya as a description, and 31 May 2025 as an expiry date. [3]
 - (iii) Change the permission so that only the user (owner) can have full access (RWX) to a file called foo. [2]
2. Explain what the following commands are doing:
 - (i) `chage -l bob` [2]
 - (ii) `rpm -qa` [1]
 - (iii) `cp -R dir3 /opt/python/` [2]
3. Name four responsibilities of the kernel. [4]
4. You are managing a Linux system that needs to perform daily backups at 2 AM without any manual intervention. You have a script (backup.sh) ready, but it needs to be scheduled to run automatically. Write all the steps you are going to take to achieve this? [4]
5. Name and explain three main components of a Linux system. [6]
6. What can be installed to keep the system running during a power failure so that it can shut down gracefully? [2]
7. What is the difference between `:q` and `:q!` in vi text editor? [4]
8. Name and explain three modes in which VI works. [6]
9. You are a system administrator, and you want to install a .deb package, but you only have an .rpm package. What will you do to get a .deb? [2]
10. Can you kill zombie processes? Justify your answer. [2]
11. What is the difference between `/etc/passwd` and `/etc/shadow` [4]
12. Name three ways to design a server that is unfriendly to casual users. [3]
13. Why would you keep a server room well-ventilated and cool? [2]
14. There are five types of System Calls, name and explain two of them. [4]
15. Write a shell script that prompts the user to enter the name of a file. The script should then check if the file exists. If it exists, the script should delete the file. If the file does not exist, the script should inform the user that the file could not be found. [6]

Good luck!!