



MACHAKOS UNIVERSITY

University Examinations for 2022/2023

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

SIT 328: OPERATING SYSTEM IMPLEMENTATION.

DATE:28/7/2023

TIME:8.30-10.30 A.M

INSTRUCTIONS

This Paper consists of FIVE questions

Answer question ONE and any other TWO questions in this paper

QUESTION ONE (COMPULSORY) (30 MARKS)

- a)
 - i) Explain TWO components of Linux Operating systems (4 marks)
 - ii) List THREE different modes used with Vi editor (3 marks)
- b) Differentiate between Soft and Hard links as used in Linux environment. (4 marks)
- c) Explain the difference between command-line interface and graphical user interface operating systems. (4 marks)
- d) Compare Linux and windows operating systems with respect to file systems. (5 marks)
- e) Command Line interface is widely used in scripting and server administration. Discuss TWO of its capabilities (4 marks)
- f) Interpret the following commands as used in Linux operating system (6 marks)
 - i) `cat file1 file2 > file3`
 - ii) `mv`
 - iii) `rm filename`

- iv) pr -h
- v) ls -R
- vi) mv filename new_file_name

QUESTION TWO (20 MARKS)

- a) As a system administrator you are required to manage the Linux Operating system environment.
 - i) State THREE types of accounts that would be created by the administrator (3 marks)
 - ii) Explain the three permissions that would be assigned (6 marks)
- b) Using an example of a command in each case, explain the purpose of the following Linux system commands.
 - i) Pipe (3 marks)
 - ii) Grep (3 marks)
 - iii) Sort (3 marks)
- c) Name any two Files used with Linux operating system (2 marks)

QUESTION THREE (20 MARKS)

- a) Explain FOUR distinguishing features of Linux from windows operating system in respect to the users of the system. (8 marks)
- b) While using Linux operating system, you may need to communicate with other devices. Using example in each case, discuss the purpose of the following communication commands.
 - i) SSH (3 marks)
 - ii) Ping (3 marks)
 - iii) FTP (3 marks)
 - iv) Telnet (3 marks)

QUESTION FOUR (20 MARKS)

- a) Explain any three reasons that make VI editor widely used in Linux environment. (6 marks)
- b) Explain the meaning of the following VI editor commands (5 marks)
 - i) ESC
 - ii) U

- iii) 3dd
 - iv) 4dw
 - v) R
- c) Discuss two types of shells in Linux environment (4 marks)
- d) Virtual terminals are Command Line Interfaces which execute the user commands.

Explain the meaning of the following shortcuts while working on virtual terminals. (5 marks)

- i) Ctrl + Alt + Del
- ii) Tab
- iii) Ctrl + u
- iv) Ctrl + w
- v) Ctrl + k

QUESTION FIVE (20 MARKS)

- a) User management in Linux is done by using Linux administration commands. write a command for each of the following user management task. (5 marks)
- i) Adds a user
 - ii) Disable a user
 - iii) Delete a user
 - iv) Add a user to a user group
 - v) Gives information on all logged in user
- b) State FIVE features of Linux operating systems (5 marks)
- c) As a system administrator of an IT firm, describe how you would create a Shell Script in Linux environment (5 marks)
- d) Using appropriate commands show how you can change permissions under Linux environment (5 marks)

