



MACHAKOS UNIVERSITY

University Examinations for 2022/2023
SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SPECIAL / SUPPLEMENTARY EXAMINATIONS FOR
BACHELOR OF SCIENCE (CLOUD COMPUTING AND SECURITY)

SCC 120: NETWORK OPERATING SYSTEMS (LINUX).

DATE:27/7/2023

TIME: 8.30-10.30 AM

INSTRUCTIONS:

Answer Question ONE and any other TWO Questions

QUESTION ONE (30 MARKS) (COMPULSORY)

- a) i) Define the term interrupt as used with Operating systems (2 marks)
ii) Name any three types of system interrupts (3 marks)
- b) Discuss any two roles played by operating system while implementing the following functions associated with computer based systems.
(i) Programs and subroutines loading (2 marks)
(ii) Processor Management (2 marks)
(iii) File management (2 marks)
- c) Differentiate between command-line interface and graphical user interface operating systems based on the way commands are entered. (4 marks)
- d) In respect to File systems, distinguish Linux from windows operating systems (5 marks)
- e) Command Line interface is widely used in scripting and server administration. State two of its capabilities (4 marks)
- f) Give the meaning of the following commands as used with Linux operating system
i) `cat file1 file2 > file3`
ii) `mv`
iii) `rm filename`
iv) `pr -h`
v) `ls -R`
vi) `mv filename new_file_name` (6 marks)

QUESTION TWO (20 MARKS)

- a) Linux operating system divides authorization into Ownership and Permission
- i) Name three owners a Linux system is assigned to (3 marks)
 - ii) Explain the three permissions assigned to Linux system owners (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) Differentiate Linux from windows operating system in respect to the users of the system. (6 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 (2 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) Explain 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 any Five features of Linux operating systems (5 marks)
- c) Outline the steps in creating a Shell Script in Linux environment (5 marks)
- d) Differentiate between Telnet and SSH as communication commands in Linux environment (5 marks)