

6130T4CSC

COMPUTER SCIENCE LEVEL 6

ICT/OS/CS/CR/02/6

Understand Operating Systems

November/December 2025



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

WRITTEN ASSESSMENT

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INSTRUCTIONS TO CANDIDATES

1. The paper consists of **TWO** sections: **A** and **B**.
2. Answer **ALL** questions in section A and any **THREE** (3) questions in section B.
3. Marks for each question are indicated in the brackets.
4. Candidates are provided with a separate answer booklet.
5. **DO NOT** write on this question paper.

This paper consists of SIX (6) printed pages
Candidate should check the question paper to ascertain that all
pages are printed as indicated and no questions are missing.

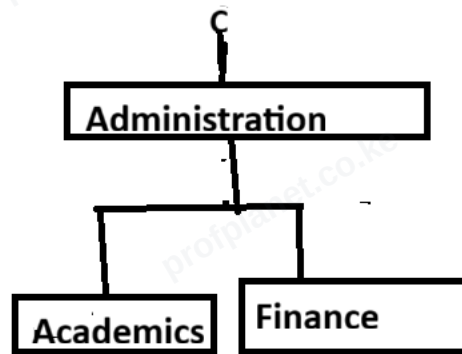
SECTION A (40 MARKS)***Answer ALL Questions in This Section***

1. You are attached as an intern ICT technician in a company. You realize that inter an office computer has become very slow. Demonstrate how you can troubleshoot using the task manager (4 marks)
2. A Computer Science student is practicing how to interact with the Operating System using the Command Line Interface (CLI). Write the command to display the list of files and directories in the current directory. (2 marks)
3. A process is a program in execution and occupies one of several states at any moment. Illustrate using a diagram various states of a process. (4 marks)
4. A trainee wants to back up lecture notes to a USB drive. Explain THREE parameters that should be check before backing up the work. (6 marks)
5. To install a program into a computer with windows operating system entails identification of hardware and software requirements, explain two hardware requirements to be considered when installing a software. (4 marks)
6. You are attached to a hospital in IT de n intern. You then witnessed a patient being rushed to the doctor despite oth the queue. In relation to scheduling in Operating system, identify the type of scheduling that was applied and explain why this method is applicable in some cases. (4 marks)
7. Explain the use of system software and give two examples of system software. (4 marks)
8. As the system administrator of a small company the manager has asked you to ensure that all user activities on the company computers are monitored for security and compliance purposes. Explain what an audit policy is and its importance in this scenario. (4 marks)
9. While working on a practical assignment, a new student noted that the computer has become slow while processing the tasks. As an experienced person in Information Technology, demonstrate how you can use the performance monitor to track and analyse performance. (4 marks)
10. You joined an IT company as an intern and found out numerous complaints due to unauthorized system access. Your preliminary troubleshooting indicates that, the system was accessed due to weak passwords. Explain four rules to be adopted while creating strong passwords. (4 marks)

SECTION B (60 MARKS)*Answer Any THREE Questions in This Section*

11.

- a. A new employee experienced challenges while managing files in her desktop computer. You have been requested to assist in creating the directory structure shown below using Windows Command Line Interface (CLI)



- i. Write a command to create the Administration in drive C. (4 marks)
 - ii. Write a command to create the Academics in the administration. (4 marks)
- b. A trainee is required to demonstrate skills in setting up and managing multiple operating systems on a single computer. Being an experienced IT technician in that office:
- i. Explain the procedure of identifying all the existing partitions. (4 marks)
 - ii. State the procedure of how to shrink an existing volume to create free space. (4 marks)
 - iii. Explain how the new partition can be used to install another operating system. (4 marks)

12.

- a. A trainee is required to demonstrate how virtualization can be used to run multiple operating systems on a computer. As the IT supervisor you are required to take the student through the following:
- i. Outline the procedure of checking hardware virtualization support using task manager (4 marks)
 - ii. Give the procedure of how to create a virtual machine (4 marks)

- b. With the need to save on storage device, operating system decides how files are arranged on the disk blocks. Given array of data as 10,12,13,35, use diagrams in each case, to explain how files are stored in contiguous and linked allocation methods.

(8 marks)

- c. The diagram given below represents a task manager

Name	Status	CPU	Memory	Disk	Network
Apps (9)					
> Adobe Acrobat		0.1%	10.6 MB	0 MB/s	0 Mbps
> Calculator (2)		0%	0.9 MB	0 MB/s	0 Mbps
> Microsoft Edge (18)		0.1%	456.6 MB	0.1 MB/s	0.1 Mbps
> Microsoft Word (3)		0%	81.5 MB	0 MB/s	0 Mbps
> Paint (2)		0.1%	12.6 MB	0 MB/s	0 Mbps

- Explain the component (2 marks)
- Explain the components marked B (2 marks)

13.

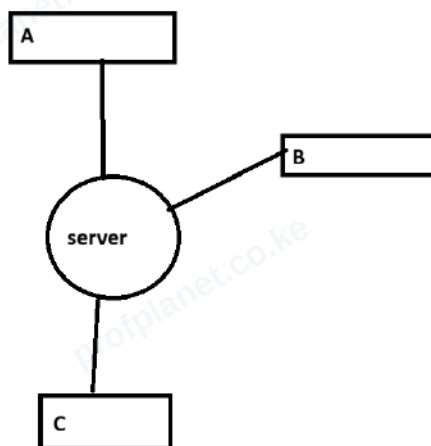
- A trainee in an IT department. During troubleshooting, the supervisor asks you to demonstrate how the computer clock system coordinates the resources of the computer system. Explain four system clock functions to the supervisor. (8 marks)
- Operating systems can be applied in different areas. Using an example in each case, explain the circumstances under which the following operating systems can be applied.
 - Real time operating system
 - Batch operating system

(4 marks)

- c. The IT manager in a firm wants to implement security procedures to protect the files against unauthorized access in a networked environment. Demonstrate how the file called school.txt can be write protected. (4 marks)
- d. The Secretary's printer has stopped working as required and upon consultation, you realize that the malfunction is caused by driver conflict. Demonstrate how the problem can be resolved. (4 marks)

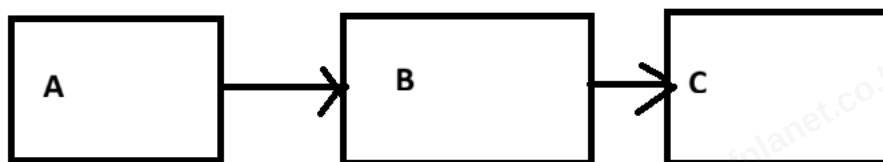
14.

- a. The Manager of XYZ IT company was advised to implement the model given below in its operation.



- i. By giving a reason, identify the type of architecture used in the figure. (2 marks)
- ii. Explain FOUR reasons why this architecture should be implemented. (8 marks)

- b. A firm implements the file-access method illustrated in the diagram below:



- i. Identify the type of file access illustrated in the figure and provide reason. (4 marks)
- ii. Explain THREE reasons why the above method should be implemented. (6 marks)