



Where Leaders are Made

UNIVERSITY EXAMINATIONS: 2025/2026

**EXAMINATION FOR THE CERTIFICATE IN INFORMATION
COMMUNICATION TECHNOLOGY**

CICT 0111

**INTRODUCTION TO COMPUTERS AND OPERATING SYSTEMS
END TERM EXAMINATION**

DATE: MONDAY 8TH DECEMBER, 2025

DURATION: 2 HOURS

TIME: 8:30AM-10:30AM

INSTRUCTIONS: Question One is Compulsory, Choose Three Other Questions

SECTION A (COMPULSORY)

QUESTION ONE (15 Marks) Compulsory

- a) Discuss the four main components of a computer system, explaining their interrelationships in computer operation. **(6 marks)**
- b) Describe the components and functions of the Central Processing Unit (CPU), emphasizing how they contribute to overall system performance. **(6 marks)**
- c) Evaluate the importance of the system unit as a core component of the computer. **(3 marks)**

SECTION B: (ANSWER ANY THREE (3) QUESTIONS IN THIS SECTION)

QUESTION TWO (15 marks)

- a) Explain the principles of the CIA Triad in computer security and analyze how each contributes to system protection. **(6 marks)**
- b) Discuss the four necessary conditions for a deadlock to occur, providing one real-world example of each. **(8 marks)**
- c) Suggest one preventive measure that can minimize the risk of deadlock in an operating system. **(1 mark)**

QUESTION THREE (15 marks)

- a) Briefly describe the primary functions of the following Linux distributions: **(6 marks)**
 - i. Ubuntu
 - ii. Fedora
 - iii. SUSE
- b) Compare and contrast open-source and proprietary operating systems, providing examples of each. **(5 marks)**
- c) Evaluate the benefits and challenges of adopting Linux as a primary OS in educational institutions. **(4 marks)**

QUESTION FOUR (15 marks)

- a) Explain the following CPU scheduling algorithms, highlighting their key characteristics and operational differences: **(8 marks)**
 - i. First Come First Served (FCFS)
 - ii. Shortest Job First (SJF)
 - iii. Priority Scheduling
 - iv. Round Robin
- b) Describe how the Round Robin algorithm manages processes in a multi-user environment. **(4 marks)**
- c) Assess the impact of scheduling choice on CPU performance and user satisfaction. **(3 marks)**

QUESTION FIVE (15 marks)

- a) Differentiate between absolute and relative file paths in a computing environment, providing relevant examples. **(4 marks)**
- b) Explain the purpose of each of the following file navigation commands in the Linux operating system: **(4 marks)**
 - i. cd
 - ii. ls
 - iii. pwd
 - iv. mkdir
- c) Discuss how improper file permission settings can lead to security vulnerabilities in a computer system, and suggest two preventive measures. **(7 marks)**

QUESTION SIX (15 marks)

- a) Define the following terms as used in computing: **(3 marks)**
 - i. Networking
 - ii. Internet
 - iii. Protocol
- b) Discuss the following categories of computer networks, highlighting their key features and typical use cases: **(6 marks)**
 - i. Small Home Networks
 - ii. Small Office/Home Office (SOHO) Networks
 - iii. Medium to Large Networks
- c) Explain the concept of network infrastructure, describing its three main components (End Devices, Intermediate Devices, and Network Media) and analyze their roles in ensuring connectivity. **(6 marks)**