



# **MURANG'A UNIVERSITY OF TECHNOLOGY**

## **SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY**

DEPARTMENT OF INFORMATION TECHNOLOGY

UNIVERSITY ORDINARY EXAMINATION

2023/2024 ACADEMIC YEAR

**THIRD YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF  
SCIENCE IN INFORMATION TECHNOLOGY**

SIT 312 – ELECTRONIC ACCESS SECURITY

DURATION: 2 HOURS

### **INSTRUCTIONS TO CANDIDATES:**

1. Answer Question **ONE** and Any other **TWO** questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

## **SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION**

### **QUESTION ONE (30 MARKS)**

- a) State and explain the main aim of the CIA Triad in securing electronic access systems. (6 marks)
- b) Using a well-labelled diagram, illustrate the main components of a thumb biometric system. (5 marks)
- c) Evaluate the importance of security electronic access control system log. (6 marks)
- d) Briefly explain two protocols used in transmission of biometric data. (4 marks)
- e) List two advantages of electronic access security systems over the traditional manual based systems. (4 marks)
- f) Using a well-labelled diagram, illustrate how the internet can be used to store electronic access control logs in a cloud – based server. (5 marks)

## **SECTION B: ANSWER ANY TWO QUESTIONS IN THIS SECTION**

### **QUESTION TWO (20 MARKS)**

- a) State and explain five IOTs devices and their uses. (10 marks)
- b) Evaluate three importance of network visibility in an electronic access control system. (6 marks)
- c) List four components of a CCTV surveillance system. (4 marks)

### **QUESTION THREE (20 MARKS)**

- a) Analyse three major threats to computer based information systems. (6 marks)
- b) List four protocols found in the TCP/TP stack indicating their functions. (8 marks)
- c) Briefly explain three types of biometric security scans. (6 marks)

### **QUESTION FOUR (20 MARKS)**

- a) Evaluate the significance of the computer misuse and cybercrime Act of Kenya 2018 in securing electronic systems. (8 marks)
- b) Discuss four main reasons why securing of IOT devices is an ever challenging process. (4 marks)
- c) Discuss the role of the board of directors of a company in the realization of securing electronic access control systems. (8 marks)