



The Co-operative University of Kenya

END OF SEMESTER EXAMINATION MAY-2022

**EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER
SCIENCE(Y III SEM II)**

UNIT CODE: BCIT 4261

UNIT TITLE: SYSTEM SECURITY AND AUDIT

DATE: 11TH MAY, 2022

TIME: 9:00 AM – 11:00 AM

INSTRUCTIONS:

- Answer question **ONE (compulsory)** and any other **TWO** questions

QUESTION ONE

[30 MARKS]

- (a) Explain the significance of the following to systems security and audit. [8 Marks]
- Risks Control Cycle
 - End Point and Device Security
 - Discretionary Access Control
 - Systems Audit Frequency
- (b) Explain how the security policy goals can be of the advantage to an organization that plans to incorporate security framework to safeguards its information assets.[4 marks]
- (c) Using a suitable example, demonstrate how an organization can achieve balance between:
- The security of organizational systems and access to those systems.[4 Marks]
 - The value of assets and costs of protecting those assets. [4 Marks]
- (d) Identify one law in Kenya that is applicable to systems security and audit. [4 Marks]
- (e) Identify three key focus areas that stands to boost the purpose of security audit for organizational systems. [3 Marks]
- (f) Explain how a good computer security policy may impacts onto the overall organizational systems security. [3 Marks]

QUESTION TWO**[20MARKS]**

- (a) Outline four important functions that information security performs to an organization. [8 Marks]
- (b) Explain any three legal issues common with organizational systems regarding the security and management of its data. [6 marks]
- (c) “Software tools and techniques that IT professionals use for application design, development, testing, and maintenance, can be used for audit purposes as well”. Do you agree with the statement? Explain the choice of your answer. [6 Marks]

QUESTION THREE**[20 MARKS]**

- (a) Access controls can be viewed as a collection of mechanisms to restrain or prohibit the use of information and systems in an organization. With a well-illustrated example, discuss the relevance of the above statement. [6 Marks]
- (b) Explain how cryptography support a number of security objectives that add value to:
- (i) A business [4 Marks]
 - (ii) The relationships between businesses or businesses and their customers. [4 Marks]
- (c) Discuss some of the major concerns regarding control and auditability of IT systems in today’s global environment. [6 Marks]

QUESTION FOUR**[20 MARKS]**

- (a) Below is an extract from Sun Tzu, a Chinese philosopher and military general;

“If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle.”

Using a suitable illustration, explain how the above statement can be adopted by an organization in implementing risk management strategy for its systems. [8 marks]

- (b) Consider yourself having been approached by a commercial bank to help in carrying out a risk assessment process for its systems. Over time the bank has been experiencing security challenges that believably have impacted onto their declining profits and consequently destabilized their customer base. As a consulted systems security expert, generate a complete document detailing the entire process that can be used to aid in strategic decision making for its business. [12 Marks]

QUESTION FIVE**[20 MARKS]**

- (a) Briefly discuss any two known audit frameworks that an organization may adopt for its systems. [6 Marks]
- (b) Below are some of the statements about securing and auditing organizational systems. For each statement, state whether TRUE or FALSE and give support to your answer. [6 Marks]
- (i) The audit process should be a cooperative arrangement in which all parties work together to make an organization more secure.
 - (ii) Organization should monitor traffic to ensure that all sensitive data are encrypted as the data are transmitted through the network.
 - (iii) Organizations should be very careful to avoid letting their domain name registration lapse.

Discuss some of the recommendations you may give to an organization that plans to establish an internal capacity building programme for her information systems security and audit personnel. [8 Marks]