



MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (CLOUD COMPUTING AND SECURITY)

SCC 130: INTRODUCTION TO CYBER SECURITY

DATE: 18/4/2023

TIME: 2:00 – 4:00 PM

Instruction: Answer Question ONE and any other TWO Questions

QUESTION ONE (30 Marks)

- a) Define the following terms (8 marks)
 - i. Cybercrime
 - ii. Vulnerability
 - iii. Countermeasure
 - iv. Threat
- b) Implementation of a strong cyber security posture is faced with major challenges. Discuss FOUR bottlenecks with regard to this statement. (8 marks)
- c) Explain FOUR measures how internet users can implement wireless security. (8 marks)
- d) Discuss TWO methods an attacker can acquire user passwords in an information system. (4 marks)
- e) Explain how to determine a secure website. (2 marks)

QUESTION TWO (20 MARKS)

- a) Explain two types of attacks and suggest how they can be countered. (4 marks)
- b) Explain FOUR security functional requirements to enable the organization attain a strong security posture. (8 marks)
- c) Discuss FOUR security design principles to consider in cyber security. (8 marks)

QUESTION THREE (20 MARKS)

- a) Discuss THREE factors contributing to cybercrime in the world. (6 marks)
- b) Online buying has gained immense adoption and this has opened new avenues for cybercrime. Explain to an online shopper FOUR safety measures to consider when buying online. (8 marks)
- c) Explain THREE cybercrimes as recognized by the Cyber Crime Act of Kenya 2018. (6 marks)

QUESTION FOUR (20 MARKS)

- a) Explain THREE malware and how they can be addressed in a system. (6 marks)
- b) Cyber security aims to achieve THREE major goals. Discuss these goals giving relevant scenarios where necessary. (6 marks)
- c) As a frequent consumer of email service, discuss FOUR security tips to apply to remain secure. (8 marks)

QUESTION FIVE (20 MARKS)

- a) You have been tasked with the responsibility of implementing security in your organization. Discuss FOUR elements of security implementation. (8 marks)
- b) Logical security is sufficient to offer the needed security in an information system. Discuss the validity of this statement with respect to integrated security. (6 marks)
- c) Briefly explain the function of a firewall. (2 marks)
- d) Differentiate between Trojan Horse and a Ransomware. (4 marks)