



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

**UNIVERSITY SUPPLEMENTARY EXAMINATIONS
2021/2022 ACADEMIC YEAR
SECOND YEAR FIRST SEMESTER EXAMINATIONS
FOR THE DEGREE**

**OF
BACHELOR OF SCIENCE INFORMATION & KNOWLEDGE
MANAGEMENT**

COURSE CODE: BIK 210

COURSE TITLE: INFORMATION SYSTEM SECURITY

DATE: FRIDAY 29-07-2022

TIME: .11:00A.M-1:00P.M

INSTRUCTIONS TO CANDIDATES

Question ONE (1) in Section A is compulsory
Answer any other 2 questions from Section B

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

Question One

- a) Describe the key difference between a virus and a worm? (4 marks)
- b) Explain the difference between hacktivism and cyberterrorism? (6 marks)
- c) i) Explain why is an Active Defense, or “Hacking Back,” is not morally justified.? (6 marks)
- ii) Discuss a scenario where breaking into a computer could be ethically justified. Under what ethical framework would this scenario be considered ethical and why? (4 marks)
- iii) Explain the four goals of security (4 marks)
- d) Define Data, System, and Network security and provide an example of each (6 marks)

Question Two

- a) The introduction of “cybertechnology” has had four major impacts on privacy. What are these impacts, and give an example of how each has affected privacy (10 marks)
- b) Explain the similarities and differences between symmetric and asymmetric encryption. Include in your answer a discussion of the strengths and weaknesses of both. (10 marks)

Question Three

- a) Describe at least four of the six tenants of “Hacker Ethics” as described by Steven Levy. (10 marks)
- b) Describe the range of security measures that you would recommend to improve the security of a home PC connected to the internet using a broadband connection (10 marks)

Question Four

- a) You have been asked to observe how data-entry clerks use new accounting software at a large accounting firm. As part of an observational study, the clerks are informed that they will remain anonymous. You install logging software on several clerks’ computers, and your analysis of these logfiles reveals that many of the clerks are making a particular data entry error when using the new software. These errors will cause the firm to lose money, and company policy clearly dictates that workers salaries will be docked for mistakes leading to loss of company profit. You report the problem with the new software package to your boss. Your boss demands that you turn over your log files so the company can follow-up with more training for the employees and ensure that the company is reimbursed for the errors from the employees’ pay.
- (a) Identify an ethical framework and use it to argue why you should NOT turn over the logfiles to your boss. (10 Marks)
- b) Identify an ethical framework and use it to argue why you should turn over the logfiles to your boss (10 marks)

Question Five

- a) Explain how a man-in-the-middle attack may be performed on a Wi-Fi network (10 marks)

b) Describe in depth the issues and trends associated with the deployments of botnets. In your discussion, briefly show what a botnet is and how it works. Present examples of its use and the dilemmas that home users and businesses face as a result of the growing number of botnets on the Internet. You may use diagrams or tables to further portray your answers. (10 marks)