



Scott Christian UNIVERSITY

SCHOOL OF PROFESSIONAL STUDIES

BACHELOR OF INFORMATION COMMUNICATION TECHNOLOGY

UNIT CODE/NAME: BCT 413: NETWORK SECURITY AND CRYPTOGRAPHY

September- December 2019/2020 End Semester Exam

- Time: 2 Hours

Instructions: Answer Question ONE (Compulsory) and any other TWO questions.

QUESTION ONE

- a) Define the following terms as used in network security.
 - i. Cyber security (2 Marks)
 - ii. Threat (2 Marks)
 - iii. Compromise (2 Marks)
- b) Outline four requirements for setting up a secure and reliable intranet. (4 Marks)
- c) Discuss the future of Internet security in Kenya. (10 Marks)
- d) Networked systems are under constant threat more so from those trusted employees who are supposed to use and protect the systems. Elaborate on:
 - i. How to identify internal staff who can be a threat to the information systems. (5 Marks)
 - ii. How to protect the systems from internal misuse and attacks. (5 Marks)

QUESTION TWO

- a) Discuss three ways that can be used in mitigating cyber security threats. (6 Marks)
- b) Outline five encryption techniques that can be applied in network security. (5 Marks)
- c) Differentiate between passive and active attacks as experienced in communication systems. (4 Marks)

QUESTION THREE

- a) Wireless networks have become the backbone of network access for any organizations. However, this has come with a lot of security concerns. As a potential cyber security consultant, elaborate on any three techniques that could be used to secure wireless networks. (6 Marks)
- b) With the aid of examples of where possible, elaborate on the following types of attacks as experienced by various organizations.
 - i. DDOS (3 Marks)
 - ii. Phishing (3 Marks)
 - iii. Man in the middle (3 Marks)

QUESTION FOUR

- a) Jane, a networks administrator with a leading Networking firm in Kenya would like to implement network security in a network. Explain five network security techniques that she could use. (5 Marks)
- b) Elaborate on any five network security monitoring tools. (10 Marks)

QUESTION FIVE

- a) Outline three typical requirements of a secure distributed system. (3 Marks)
- b) Explain how a man-in-the-middle attack on a Wi-Fi network can be defeated. (4 Marks)
- c) An ideal password authentication scheme has to withstand a number of attacks. Describe three of these attacks. (6 Marks)
- d) Briefly explain the principle of least privilege in network security. (2 Marks)