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KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
END SEMESTER EXAMINATION
FOR THE BACHELOR OF SCIENCE IN COMPUTER SCIENCE
KCS 410: SECURITY AND CRYPTOGRAPHY

Date: 14TH AUGUST 2023

Time: 8:30AM – 10:30AM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- Information security focuses on protecting information assets from damage or harm; explain clearly what are some of these assets that should be protected during information security. (5 Marks)
- Cryptographic systems are generally classified along three independent dimensions. Explain the three independent dimensions that classify cryptographic systems. (5 Marks)
- Discuss what are the key technological components used for security implementation. (5 Marks)
- Explain different reasons why DNS monitoring is very important in any computer systems and networks. (5 Marks)
- Discuss how asymmetric encryption algorithms work. (10 Marks)

QUESTION 2 (20 MARKS)

- What is data leakage? Explain various factors that can cause data leakage. (6 Marks)
- Discuss reasons why internal threats are usually more effective than external threats. (6 Marks)
- Discuss various security management of electronic business information system over computer networks. (8 Marks)

QUESTION 3 (20 MARKS)

- Explain various steps to successful data loss prevention controls. (6 Marks)
- Explain clearly reasons why computer systems and its information must protect and secure. (6 Marks)
- Phishing is a technique that deceit people to obtain from users. Explain how this can be prevented in computer systems and networks. (8 Marks)

QUESTION 4 (20 MARKS)

- Discuss different goals of information security within an organization. (5 Marks)
- Explain what are the different approaches used for implementing information security (5 Marks)
- Authenticity is very important when comes to security service of information in any network, explain its relevance. (10 Marks)

QUESTION 5 (20 MARKS)

- a) Explain different reasons why we are advised to study information security in different institutions and how it is seen as a social science? (10 Marks)
- b) Distinguish clearly the difference between digital signature and conventional signature, and give example of the same (10 Marks)