BINDURA UNIVERSITY OF SCIENCEEDUCATION

FACULTY OF SCIENCE EDUCATION

EDUCATIONAL TECHNOLOGY DEPARTMENT

BACHELOR OF SCIENCE EDUCATION IN COMPUTER SCIENCE

CS412/EDT412   Computer Security

Time 3 hours   AUG 2024

Instruction to candidates

Answer all questions, each question carries 20 marks

Question 1

    a. What is the CIA Triad in Cyber Security?   [2]

    b. Describe its elements of (a) above.   [8]

    c. Compare asymmetric encryption and asymmetric encryption?   [10]

Question 2

    a. You receive a electronic Christmas card(e-card) to your work email. The address of the sender looks very authentic. You need to click on the attachment to see the card.

        i. What should you do?   Give reasons.   [4]

        ii. What are the **four (4)** big risks in this scenario, explain them.   [12]

    b. Explain why MAC-based authentication cannot be used as a digital signature.   [4]

Question 3

    a. Explain data leakage   [3]

    b. Explain the **three** categories of data leakage   [6]

    c. With the aid of a simple diagram explain Asymmetric encryption.   [5]

    d. What are advantages of using symmetric encryption?   [3]

    e. What are the disadvantages of using the asymmetric encryption   [3]

Question 4

    a. What is authentication?   [2]

    b. Explain and **four(4)** types of identification   [8]

    c. State two advantages of a reflector DDoS attack (compared to direct DDoS attack).   [4]

    d. How can organizations minimize risks associated with inside threats?   [6]

Question 5

    a. What are information security controls?   [2]

    b. Describe any **four (4)** best practices of security controls   [8]

    c. An ideal password authentication scheme should have to with stand a number of attacks. Describe **five** of these attacks.   [10]

<center>END OF EXAMINATION</center>