SLIATE
SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION
(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

Higher National Diploma in Information Technology
Second Year, First Semester Examination – 2023
HNDIT 3062 Information and Computer Security

Instructions for candidates:	No. of questions : 05
Answer four (04) questions only.	No. of pages : 02
All questions carry equal marks.	Time : Two (02) Hours

Question 01

I.   What is meant by computer Security? (04 Marks)

II. Describe the X.800 security services (04 Marks)

III. List the main two types of security attacks and describe the subcategories (05 Marks)

IV. Briefly explain the CIA triad and its importance (06 Marks)

V.   Briefly explain the following basic terms in security

   a) Vulnerability
   b) Threat
   c) Attack (06 Marks)

[Total 25 Marks]

Question 02

I.   Describe four types of cryptography primitives (04 Marks)

II. List four basic objectives of Information security. (04 Marks)

III. Explain differences between Hash and MAC (05 Marks)

IV. Explain symmetric key cryptographic system with a suitable diagram. (06 Marks)

V.   What are the techniques used to build an authentication protocol? (06 Marks)

[Total 25 Marks]

Question 03

I. What is meant by Authentication? (04 Marks)

II. Explain 4 types of biometric authentication (04 Marks)

III. What is a digital signature? Explain creation process of digital signature with a suitable diagram (05 Marks)

IV. What is meant by a digital certificate? Draw a certificate life cycle. (06 Marks)

V. Briefly explain the following 03 types of authentication methods (06 Marks)

    a) E Token
    b) Smart cards
    c) RFID

[Total 25 Marks]

Question 04

I. Describe SSL protocol (04 Marks)

II. Explain basic steps in access control related to the computer process (04 Marks)

III. Explain four (04) types of major access control models (05 Marks)

IV. Describe 4 types of "DOS ATTACK" (06 Marks)

V. Explain three (03) methods to defend the DOS attacks (06 Marks)

[Total 25 Marks]

Question 05

I. Describe differences between Logic Bomb and Trapdoors malicious software (04 Marks)

II. Explain the mechanism of the proxy server (04 Marks)

III. How do proxy server secure computer assets? (05 Marks)

IV. Briefly explain the following three types of security services (06 Marks)

    a. IP security

    b. VPN

    c. Denial of service attack

V. Explain three(03) important characteristics of S/MIME and PGP (06 Marks)

[Total 25 Marks]