



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 – 2022
HNDIT 3062 Information and Computer Security

Instructions for Candidates:
Answer any Four (04) Questions Only.
Each question carries equal marks

No. of questions: 05
No. of pages : 03
Time : Two (02) Hours

Question 01

- I. Explain Computer Security and assets. (04 Marks)
- II. Describe the term Security Mechanism (04 Marks)
- III. Name the five major categories of security services defined in X.800 OSI security objectives (05 Marks)
- IV. Briefly explain the CIA triad and its importance (06 Marks)
- V. Explain Active and passive attack types (06 Marks)

[Total 25 Marks]

Question 02

- I. Explain the differences between Cryptography and Cryptanalysis (04 Marks)
- II. List four basic properties of a good encryption algorithm. (04 Marks)
- III. Explain public key cryptography with a suitable diagram (05 Marks)
- IV. Compare and contrast between Symmetric and Asymmetric key encryption algorithms. (06 Marks)
- V. Briefly explain the following
 - a. Hash function
 - b. MAC (06 Marks)

[Total 25 Marks]

MAC
DAC
RBAC

Question 03

- I. Explain Authentication with 3 categories (04 Marks)
- II. Explain physical and behavioral Biometric authentication with suitable examples (04 Marks)
- III. What is a proxy server? Write three advantages (05 Marks)
- IV. Explain Authentication tokens with the following two examples (06 Marks)
 - a. X.509 certificates
 - b. Kerberos tickets
- V. Draw a flowchart and explain enrollment and verification in Biometric authentication (06 Marks)

[Total 25 Marks]

Question 04

- I. What is Access control? (04 Marks)
- II. Explain the following access control terminology (04 Marks)
 - a. Object
 - b. Subject
 - c. Operation
 - d. Owner
- III. Consider the type of virus attack and explain the following terms (05 Marks)
 - a. parasitic virus-
 - b. boot sector virus-
 - c. memory-resident virus-
- IV. Name the four services provided by a firewall for enabling network security (06 Marks)
- V. Write the difference between four types of access controls (06 Marks)

[Total 25 Marks]

Question 05

- I. Define the following terms (04 Marks)
 - a. Digital certificate
 - b. Digital Signature
- II. Write the differences between Logic Bomb and Trapdoors malicious software (04 Marks)
- III. How to prevent cross-site scripting? explain 4 methods (05 Marks)
- IV. Explain important three characteristics of S/MIME and PGP (06 Marks)
- V. List three ways to secure an Email (06 Marks)

[Total 25 Marks]