

National Forensic Sciences University
School of Cyber Security and Digital Forensics

Course Name: M.Tech Artificial Intelligence and Data Science (Batch: 2023-25)
Semester - II Exam: TA - I (FEB – 2025)

Subject Code: CTMTAIDS SII P5 EL1 **Time:** 04:15pm-5:00pm
Subject Name: Blockchain Security and Investigations **Date:**10/2/2025

Intructions: All questions carry equal marks.

- Q1. Using an **Additive Cipher** with a key $K = 8$, encrypt the plaintext: "WELCOME"
- Q2. What are the basic principles of security? Explain active and passive attacks.
- Q3. Explain asymmetric and symmetric cryptography.
- Q4. Using Vigenere cipher, encrypt the message "She is Listening" with key "PASCAL"
- Q5. Elaborate on the concept of hash functions and hash pointers and their role in ensuring data integrity.