COMSATS University Islamabad, Attock Campus

Department of Computer Science

Course: **INFORMATION SECURITY** Total Marks: 10
Class: **SE IV** Semester: **spring 2026**

Lab Assignment 1

Deadline: 28th-Feb-2026

Note: Copied Assignments will be **strictly** marked zero.

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[CLO4: Apply the knowledge appropriate to the discipline particularly in the field of data security .]

Task 1: Implement the Caesar Cipher (10 Marks)

Write a Python program that encrypts and decrypts a message using the **Caesar Cipher**.

Requirements:

1. Write a function `caesar_encrypt(text, shift)` that takes a string and a shift value as input and returns the encrypted text.
2. Write a function `caesar_decrypt(ciphertext, shift)` that reverses the encryption and returns the original message.
3. The program **must consider spaces and special characters** only letters should be shifted.
4. The program should **maintain uppercase and lowercase letters** while encrypting and decrypting.

Submission Guidelines:

- Submit a **Python file** (`.py`) with your program implementation.
- Include **comments** to explain your code.
- Please provide a PDF document containing a detailed line by line explanation of the code implementation along with a security analysis. Additionally, include screenshots of code to support your explanation.