# Siddaganga Institute of Technology, Tumkur-572103

Department of Computer Science and Engineering

**CRYPTOGRAPHY AND NETWORK SECURITY LABORATORY (7CSL02)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Student Name: | | | USN: | | Batch No: | |
| **Evaluation:** | | | | | | |
| **Write Up (10 marks)** | **Clarity in concepts (10 marks)** | **Implementation and execution of the algorithms (10 marks)** | | **Viva (05 marks)** | | **Total (35 marks)** |
|  |  |  | |  | |  |
|  | | | | | | |
| Sl.No | Name of the Faculty In-Charge | | | | | Signature |
| 1. |  | | | | |  |
| 2. |  | | | | |  |
| **Question No: 1**  Perform encryption and decryption using mono-alphabetic cipher. The program should support the following:   1. Construct an input file named plaintext.txt (consisting of 1000 alphabets, without any space or special characters) 2. Compute key space (Permutation of set of all letters appeared in plaintext.txt: there are n! permutations of a set of n elements) 3. Encrypt the characters of plaintext.txt using any one key from (ii) and store the corresponding ciphertext characters in ciphertext.txt 4. Compute the frequency of occurrence of each alphabet in both plaintext.txt and ciphertext.txt and tabulate the results as follows      |  |  |  | | --- | --- | --- | | Frequency | Plaintext character | Ciphertext character | | 12.34  .  . | A  .  . | X  .  . | | | | | | | |
| **Monoalphabetic substitution cipher:**  Select a Key randomly from 26! Key space and map from plain alphabet to cipher alphabet:   * Let us consider Plaintext P which contains every alphabets S = {a, b, c}, * There are 3! Permutations of S in a key space. * Randomly chosen key K from key space. * Map from plain alphabet to cipher alphabet | | | | | | |