

# CS 409 Ethical Hacking

## Homework 4

(24 pts)

1. Explain the three properties of one-way hash function.
2. What is a cryptosystem? Explain the five types of cryptanalytic attacks.
3. What is Rail Fence cipher? Convert the following plaintext into ciphertext using Rail Fence Cipher.

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4. Convert the following plaintext into ciphertext using Playfair Cipher.

Key: MONARCHY

Plaintext: INSTRUMENTS

5. Explain frequency attack on a substitution cipher.
6. Convert the following plaintext into ciphertext using Vernam Cipher (One-Time Pad).

Key: HELLO

Plaintext: WORLD

7. What is steganography? Mention some techniques of doing steganography.