Homework Assignment: Chapter 3 – Fundamentals of Cryptography

1. Explain the difference between steganography and cryptography. Provide an example of each.

2. Define the terms plaintext, ciphertext, and cleartext. How are they used in cryptographic systems?

3. What are the primary benefits of using cryptography in information security?

4. Compare symmetric and asymmetric cryptographic algorithms. List one example of each.

5. Describe the purpose of a hash algorithm. Why is hashing considered a one-way function?

6. What is a digital signature and how does it ensure message integrity?

7. Describe the difference between file-level, full-disk, and database encryption.

8. What are self-encrypting drives (SEDs) and how do they enhance security?

9. How does blockchain technology utilize cryptography to ensure data integrity?

10. Identify and explain at least two types of cryptographic attacks.