

Cryptography Basics for Teens

Cryptography · Answer Key · 25 Questions

1. What is the term for the original, readable message before it is encrypted?

- A) Ciphertext
- B) Plaintext**
- C) Algorithm
- D) Key

2. Which ancient civilization is famously associated with the Caesar cipher?

- A) The Romans**
- B) The Egyptians
- C) The Mayans
- D) The Greeks

3. What is the process of converting information into a secret code to prevent unauthorized access?

- A) Decoding
- B) Hashing
- C) Encryption**
- D) Decryption

4. In cryptography, what is a 'key' used for?

- A) To lock a physical door
- B) To unlock a smartphone
- C) To transform plaintext into ciphertext and vice versa**
- D) To identify the author of a message

5. What is the name of the scrambled, unreadable output produced after encryption?

- A) Ciphertext**
- B) Plaintext
- C) Metadata
- D) Protocol

6. Which type of cryptography uses the same key for both encryption and decryption?

- A) Asymmetric
- B) Symmetric**
- C) Quantum
- D) Public Key

7. What is the common term for the study of techniques used to break codes and ciphers?

- A) Cryptography
- B) Steganography
- C) Cryptanalysis**
- D) Ciphering

8. Which device was famously used by Germany to encrypt messages during World War II?

- A) ENIAC
- B) Enigma**
- C) Colossus
- D) Bombe

9. What is the main purpose of a cryptographic hash function?

- A) To compress files
- B) To verify data integrity**
- C) To encrypt private emails
- D) To shorten website links

10. What is steganography?

- A) The study of secret writing
- B) The practice of hiding messages inside other files**
- C) The science of cracking codes
- D) The invention of new ciphers

11. In asymmetric encryption, how many keys are involved in the process?

- A) One
- B) Two**
- C) Three
- D) Four

12. What does HTTPS stand for in the context of website security?

- A) Hypertext Transfer Protocol Secure**
- B) Hypertext Transmission Private Secure
- C) High Transfer Protocol Security
- D) Hyperlink Transfer Protocol System

13. Which of these is a common symmetric encryption algorithm?

- A) RSA
- B) AES**
- C) ECC
- D) Diffie-Hellman

14. Who is often referred to as the 'father of computer science' and was a key codebreaker during WWII?

A) Charles Babbage

B) Alan Turing

C) Ada Lovelace

D) Nikola Tesla

15. What does a digital signature primarily prove?

A) The message is encrypted

B) The message was not altered and the sender is authentic

C) The message can be read by anyone

D) The message is deleted after reading

16. Which of the following is a classic example of a simple substitution cipher?

A) Caesar cipher

B) AES-256

C) RSA

D) SHA-256

17. What is 'brute-force' in the context of cryptography?

A) Trying every possible key until the correct one is found

B) Breaking the physical computer

C) Intercepting a message in transit

D) Writing a mathematical proof

18. Public key cryptography is also known by what other name?

A) Private key cryptography

B) Asymmetric cryptography

C) Secret key cryptography

D) Hash cryptography

19. What is the primary function of a 'nonce' in cryptography?

A) To identify the sender

B) To provide a unique value to prevent replay attacks

C) To encrypt the final block of data

D) To compress the message

20. Which organization is responsible for setting many of the standards used in modern cryptography, such as AES?

- A) NIST**
- B) FBI
- C) NASA
- D) UNESCO

21. What is a 'man-in-the-middle' attack?

- A) A type of encryption algorithm
- B) An interception where an attacker sits between two communicating parties**
- C) A method to create a digital signature
- D) A way to recover a forgotten password

22. What does the 'S' in TLS (Transport Layer Security) signify?

- A) Speed
- B) Security**
- C) Storage
- D) System

23. What is a 'key space' in cryptography?

- A) The amount of memory a computer uses
- B) The set of all possible keys for a specific algorithm**
- C) The physical space where keys are stored
- D) The speed at which a key is generated

24. What is the main goal of 'Perfect Forward Secrecy'?

- A) To speed up encryption
- B) To ensure that a compromised long-term key does not compromise past sessions**
- C) To make keys easier to remember
- D) To allow users to delete messages

25. What is the term for the practice of making secret messages look like regular, harmless data?

- A) Encryption
- B) Hashing
- C) Obfuscation
- D) Steganography**