Cryptography in the Cosmos

Cryptography · Answer Key · 15 Questions

1. Which planet is known for its prominent rings, often visualized as a secure veil around a core?

A) Earth
B) Jupiter
C) Saturn
D) Mars

2. In cryptography, 'keys' are crucial. Which celestial body is our closest star, providing the 'key' to life on Earth?

A) Proxima Centauri
B) The Sun
C) Sirius
D) Alpha Centauri A

3. A 'cipher' transforms data. Which famous space mission was named after the cipher used to decode ancient Egyptian hieroglyphs?

A) Voyager
B) Apollo
C) Rosetta
D) Hubble

4. Public-key cryptography uses two keys: a public key for encryption and a private key for decryption. Which planet has two distinct hemispheres that can be thought of as analogous to these keys, one facing the sun (public) and one in shadow (private)?

A) Mercury
B) Venus
C) Pluto
D) Neptune

5. Hashing is a one-way cryptographic function. Which dwarf planet, once a planet, has undergone a 'reclassification,' similar to how a hash function permanently transforms data?

A) Ceres
B) Eris
C) Haumea
D) Pluto

6. Digital signatures use private keys to sign and public keys to verify. The Moon orbits Earth. If Earth's private key signs a message, which celestial body's public key can verify it?

A) The Sun
B) The Moon
C) Mars
D) Jupiter

7. A 'symmetric key' is used for both encryption and decryption. Which planet in our solar system is known for having a highly symmetrical appearance due to its composition?

A) Uranus
B) Neptune
C) Jupiter
D) Mars

8. Encryption ensures confidentiality. Which gas giant planet is so large that it contains more mass than all other planets in the Solar System combined, metaphorically 'hiding' others within its influence?

A) Saturn
B) Neptune
C) Uranus
D) Jupiter

9. A 'brute-force attack' tries all possible keys. Imagine trying to guess the exact orbit of a newly discovered exoplanet. This is akin to which cryptographic attack?

A) Man-in-the-middle attack
B) Brute-force attack
C) Dictionary attack
D) Side-channel attack

10. In cryptography, 'authentication' verifies identity. The heliosphere, a bubble of charged particles from the Sun, protects the solar system. This protective boundary acts like a form of cosmic 'authentication' against interstellar threats.

A) The Oort Cloud
B) The Kuiper Belt
C) The Heliosphere
D) The Asteroid Belt

11. A 'block cipher' encrypts data in fixed-size blocks. The distinct layers of Earth's atmosphere, like the troposphere, stratosphere, mesosphere, etc., can be conceptually compared to these fixed-size 'blocks' of air.

A) The Earth's core
B) The Earth's mantle
C) The Earth's atmosphere
D) The Earth's oceans

12. A 'stream cipher' encrypts data bit by bit. The continuous flow of cosmic rays from space, always present, can be likened to a 'stream' of data.

A) Solar flares
B) Cosmic rays
C) Comet tails
D) Asteroid impacts

13. The 'Internet' relies heavily on cryptography for secure communication. Which celestial body is often associated with communication or speed, and is also the fastest-orbiting planet?

A) Venus
B) Earth
C) Mars
D) Mercury

14. A 'cryptographic hash' produces a unique fingerprint. The unique spectral signature of a star allows astronomers to identify its composition, similar to how a hash creates a unique identifier.

A) The star's brightness
B) The star's color
C) The star's spectral signature
D) The star's temperature

15. End-to-end encryption ensures that only the sender and receiver can read messages. The vast, empty vacuum of space between planets ensures that messages sent across it are inherently difficult for unauthorized parties to intercept.

A) The density of gas clouds
B) The presence of asteroids
C) The vacuum of space
D) The gravitational pull of stars