

Advanced Solar System Knowledge

Solar System Basics · Answer Key · 8 Questions

1. Which terrestrial planet exhibits the most significant axial tilt, leading to extreme seasonal variations?

- A) Venus
- B) Mars
- C) Uranus**
- D) Mercury

2. The majority of Jupiter's magnetosphere is dominated by which charged particle?

- A) Electrons**
- B) Protons
- C) Alpha particles
- D) Helium ions

3. What is the primary component of the Kuiper Belt Object Arrokoth (formerly Ultima Thule)?

- A) Water ice and silicates**
- B) Methane ice and ammonia
- C) Carbonaceous chondrites
- D) Nickel-iron alloys

4. Which of the following moons is known to possess a substantial atmosphere primarily composed of nitrogen?

- A) Io (Jupiter)
- B) Titan (Saturn)**
- C) Europa (Jupiter)
- D) Enceladus (Saturn)

5. The Great Dark Spot, a storm system observed on Neptune, has a characteristic that distinguishes it from Jupiter's Great Red Spot. What is this distinguishing feature?

- A) It is permanent and unchanging.
- B) It has been observed to dissipate and reform.**
- C) It is composed primarily of methane clouds.
- D) It is significantly smaller than the Great Red Spot.

6. What phenomenon is responsible for the retrograde rotation of Venus?

- A) Tidal locking with the Sun**
- B) Past asteroid impact
- C) Gravitational influence of its large moons
- D) The formation process of the solar system

7. Which dwarf planet is located within the asteroid belt and is the largest object in that region?

- A) Pluto
- B) Eris
- C) Ceres**
- D) Makemake

8. The surface of Mercury is heavily cratered, similar to the Moon. What is the primary reason for this lack of significant geological activity to resurface its crust?

- A) Insufficient internal heat**
- B) Absence of a substantial atmosphere
- C) Weak gravitational pull
- D) Presence of only heavy elements in its core