

Europe's Spacefront: JUICE, SMILE, and Artemis II's Lunar Leap

Space Exploration · Answer Key · 8 Questions

1. What is the primary scientific objective of the European Space Agency's JUICE mission?

- A) To study the formation and habitability of Jupiter's icy moons.**
- B) To search for exoplanets in the Kepler-186 system.
- C) To map the surface of Mars in high resolution.
- D) To investigate the atmosphere of Venus.

2. The SMILE mission, a joint venture between ESA and the Chinese Academy of Sciences, is designed to study:

- A) The interaction between the solar wind and Earth's magnetosphere.**
- B) The composition of interstellar dust clouds.
- C) The early universe's expansion rate.
- D) The geological activity of Io, one of Jupiter's moons.

3. Which European-built component is critical for the functioning of NASA's Orion spacecraft on the Artemis II mission?

- A) The European Service Module (ESM).**
- B) The Galileo Navigation System.
- C) The Ariane 6 upper stage.
- D) The ExoMars rover's communication system.

4. What significant event occurred with the Ariane 6 rocket's maiden flight on July 9, 2024?

- A) It successfully orbited satellites but experienced a partial failure in its upper stage deorbit burn.**
- B) It achieved a fully successful mission with all stages performing as expected.
- C) Its launch was postponed indefinitely due to technical issues.
- D) It was the first European rocket to reach Mars orbit.

5. The Euclid space telescope, led by ESA, is primarily focused on understanding:

- A) Dark matter and dark energy in the universe.**
- B) The formation of stars within our galaxy.
- C) The magnetosphere of Jupiter.
- D) The early conditions of the Earth's atmosphere.

6. Europe's contribution to the International Space Station includes:

- A) The Columbus laboratory module, Node-2, Node-3, and the Automated Transfer Vehicle (ATV).**
- B) Only the primary launch vehicle, Ariane 5.
- C) The entire life support system for the US segment.
- D) The main telescope for Earth observation.

7. What is a key feature of ESA's 'Space Rider' spacecraft concept?

- A) It is designed to be a reusable spacecraft for reentry and landing.**
- B) It is intended for long-duration exploration missions to Jupiter.
- C) It is a specialized satellite for asteroid detection.
- D) It is a large telescope for observing distant galaxies.

8. When did the first Ariane 6 launch take place?

- A) July 9, 2024**
- B) May 19, 2026
- C) April 2, 2026
- D) November 23, 2023