

Europe's Latest Space Ventures: Ariane 6 Success, Asteroid Defense, and Lunar Exploration

Space Exploration · Answer Key · 10 Questions

1. What is the primary objective of the European Space Agency's (ESA) Hera mission?

- A) To launch a new heavy-lift rocket
- B) To study the aftermath of NASA's DART mission on the Didymos asteroid system**
- C) To establish a lunar base
- D) To deploy new Galileo navigation satellites

2. Which European rocket successfully completed its maiden flight on July 9, 2024, marking a significant step for Europe's autonomous access to space?

- A) Vega-C
- B) Ariane 5
- C) Soyuz
- D) Ariane 6**

3. Europe's contribution to NASA's Artemis program, particularly for the Artemis II mission, is primarily through the European Service Module (ESM). What essential functions does the ESM provide to the Orion spacecraft?

- A) Power generation and propulsion
- B) Life support (air and water) and temperature control
- C) Propulsion for key maneuvers and electricity generation
- D) All of the above**

4. The ESA's Hera mission is set to rendezvous with which binary asteroid system, famously impacted by NASA's DART spacecraft?

- A) Bennu
- B) Ryugu
- C) Didymos**
- D) Psyche

5. What recent development has led to uncertainty for Europe's role in NASA's lunar program, specifically concerning the Gateway orbital station?

- A) NASA's decision to focus on lunar surface bases instead of orbital facilities**
- B) The failure of a European launch vehicle
- C) A dispute over funding for the Gateway modules
- D) The cancellation of the Artemis II mission

6. The Copernicus Programme, an EU Earth observation initiative, recently launched the Sentinel-1D satellite. What is the primary function of the Sentinel-1 mission?

- A) Monitoring Earth's atmosphere for climate change
- B) Providing all-weather, day and night radar imaging for land and ocean services**
- C) Observing celestial bodies for astronomical research
- D) Tracking space debris in Earth's orbit

7. What is a key objective of the Jupiter Icy Moons Explorer (JUICE) mission, launched by ESA?

- A) To land humans on Jupiter's moon Europa
- B) To study Jupiter and its icy moons, Ganymede, Callisto, and Europa, for signs of habitability**
- C) To establish a research base on Ganymede
- D) To capture images of Jupiter's Great Red Spot

8. The European Galileo satellite navigation system is being enhanced with new satellites. When are the remaining first-generation Galileo satellites expected to be deployed to increase constellation robustness?

- A) By the end of 2024
- B) In 2025 and 2026**
- C) In 2027
- D) By mid-2025

9. What significant change in NASA's Artemis program plans has caused a setback for European partners who had invested in the lunar Gateway station?

- A) NASA is prioritizing Mars missions over lunar missions
- B) NASA is suspending Gateway construction to focus on building a lunar surface base**
- C) NASA is seeking new international partners for Gateway
- D) NASA has decided to use a different launch vehicle for Gateway components

10. What is the main purpose of the EU Space Strategy for Security and Defence?

- A) To develop new space tourism ventures
- B) To enhance space security, resilience, and strategic autonomy for Europe**
- C) To establish a joint European space exploration mission to Mars
- D) To regulate private space companies operating in Europe