

Europe's Cutting-Edge Discoveries: From Webb's Cosmic Secrets to Quantum

Science · Answer Key · 10 Questions

1. The European Space Agency's Euclid mission, launched in July 2023, aims to map a significant portion of the universe. What is the primary objective of the Euclid mission in understanding cosmic evolution?

- A) To detect dark matter directly through gravitational lensing.
- B) To map the distribution and evolution of galaxies in the universe.**
- C) To search for exoplanets within the habitable zones of nearby stars.
- D) To study the composition of interstellar gas clouds.

2. Europe is a leader in mRNA technology beyond COVID-19 vaccines. Which of these is a key area of advancement for European-based mRNA research in oncology?

- A) Developing universal cancer vaccines effective against all tumor types.
- B) Creating personalized cancer vaccines tailored to individual tumor profiles.**
- C) Using mRNA to deliver chemotherapy drugs directly to cancer cells.
- D) Engineering mRNA that stimulates the immune system to attack healthy cells.

3. The EU has launched a comprehensive strategy to bolster its position in quantum technologies. Which of the following is a stated goal of the EU's Quantum Strategy by 2030?

- A) To exclusively develop quantum encryption for military use.
- B) To establish Europe as a global leader in quantum technologies.**
- C) To replace all existing classical computing infrastructure with quantum computers.
- D) To ban the development of quantum computing in private sectors.

4. CERN's next director general, Mark Thomson, has highlighted the transformative potential of AI in particle physics. What specific area of fundamental physics could AI help to illuminate regarding the universe's fate?

- A) The exact composition of dark matter.
- B) The precise number of dimensions in spacetime.
- C) The potential for a catastrophic collapse of the universe.**
- D) The origin of gravity waves.

5. Archaeological discoveries in Europe during 2025 have revealed significant insights into ancient European history. What type of ancient structures were discovered in Greater Poland, dating back approximately 5,500 years?

- A) Viking longhouses.
- B) Roman aqueducts.
- C) Kujavian-type tombs, also called 'Polish pyramids'.**
- D) Neolithic henges.

6. Europe is a leading center for mRNA medicine, with significant advancements beyond infectious diseases. A study published in February 2026 on registered clinical trials indicated a rapid growth in which two segments of mRNA applications?

- A) Influenza prevention and veterinary medicine.
- B) Oncology and rare disease therapies.**
- C) Cosmetic applications and nutritional supplements.
- D) Agricultural crop enhancement and biofuels.

7. The James Webb Space Telescope (JWST), an international partnership including the ESA, has made numerous discoveries. In September 2025, JWST provided the first direct measurements of the chemical and physical properties of what celestial phenomenon?

- A) A protostellar disk in the Orion Nebula.
- B) A moon-forming disc encircling a large exoplanet.**
- C) The accretion disk of a supermassive black hole.
- D) The atmosphere of Venus.

8. Europe is strengthening its position in quantum technologies. The EU Quantum Strategy, adopted in July 2025, focuses on five core pillars. Which of these pillars aims to support startups and connect researchers with industry?

- A) Scale infrastructure
- B) Secure sovereignty
- C) Boost investment
- D) Accelerate commercialisation**

9. AI ethics is a growing concern, with the EU's AI Act playing a significant role. Effective from August 2024, what is a primary function of the EU AI Act regarding AI systems?

- A) To mandate the use of AI in all European businesses.
- B) To ban all AI research within the European Union.
- C) To categorize AI systems by risk level and impose corresponding requirements.**
- D) To ensure AI systems always make decisions in favor of human users.

10. Recent archaeological finds in Europe are rewriting historical records. In December 2025, archaeologists in France revealed a monumental wall from nearly seven thousand years ago. What was one of the speculative purposes for this structure?

- A) A defensive barrier against invading armies.
- B) A large-scale astronomical observatory.
- C) A market square for ancient trade.
- D) Protection against rising sea levels or a fish trap.**