

Milestones in Advanced Physics

Advanced Physics · Practice Test · 15 Questions

1. Who was the first person to successfully demonstrate the existence of electromagnetic waves, confirming Maxwell's theory?

- A) Heinrich Hertz
- B) James Clerk Maxwell
- C) Guglielmo Marconi
- D) Michael Faraday

2. In 1911, Heike Kamerlingh Onnes was the first to observe which phenomenon in mercury when cooled to near absolute zero?

- A) Bose-Einstein Condensation
- B) Superconductivity
- C) Superfluidity
- D) Quantum Tunneling

3. Which subatomic particle was the first to be discovered, identified by J.J. Thomson in 1897?

- A) Proton
- B) Neutron
- C) Electron
- D) Positron

4. Who is credited with the first experimental observation of the photoelectric effect in 1887?

- A) Albert Einstein
- B) Heinrich Hertz
- C) Philipp Lenard
- D) Max Planck

5. The first controlled, self-sustaining nuclear chain reaction was achieved in 1942 at which location?

- A) Los Alamos National Laboratory
- B) Oak Ridge National Laboratory
- C) University of Chicago
- D) Massachusetts Institute of Technology

6. Who performed the first experimental measurement of the gravitational constant (G) in 1798?

- A) Isaac Newton
- B) Henry Cavendish
- C) Albert Einstein
- D) Charles-Augustin de Coulomb

7. Which scientist is credited with the first successful measurement of the speed of light using a rotating mirror apparatus in 1849?

- A) Hippolyte Fizeau
- B) Léon Foucault
- C) Ole Rømer
- D) Albert Michelson

8. The first observation of gravitational waves, predicted by General Relativity, was announced by the LIGO collaboration in which year?

- A) 2010
- B) 2012
- C) 2014
- D) 2016

9. Who was the first physicist to propose the concept of 'quanta' to explain black-body radiation?

- A) Niels Bohr
- B) Max Planck
- C) Werner Heisenberg
- D) Erwin Schrödinger

10. In 1932, Carl Anderson became the first to discover which antimatter particle in cosmic rays?

- A) Antiproton
- B) Antineutron
- C) Positron
- D) Muon

11. Which physicist led the team that built the first laser, which was successfully operated in 1960?

- A) Theodore Maiman
- B) Charles Townes
- C) Arthur Schawlow
- D) Gordon Gould

12. Who conducted the first experiment to demonstrate the wave-particle duality of electrons using diffraction?

- A) Louis de Broglie
- B) Clinton Davisson and Lester Germer
- C) George Paget Thomson
- D) C.J. Davisson

13. The first artificial transuranium element, Neptunium, was synthesized in 1940 by which researchers?

- A) Ernest Lawrence and Glenn Seaborg
- B) Edwin McMillan and Philip Abelson
- C) Enrico Fermi and Emilio Segrè
- D) Marie and Pierre Curie

14. Who was the first to mathematically predict the existence of the positron as a solution to the relativistic electron equation?

- A) Paul Dirac
- B) Richard Feynman
- C) Wolfgang Pauli
- D) Subrahmanyan Chandrasekhar

15. The first successful test of the parity violation in weak interactions was conducted in 1956 by which physicist?

- A) Chien-Shiung Wu
- B) Tsung-Dao Lee
- C) Chen-Ning Yang
- D) Enrico Fermi