

Historical Milestones in Quantum Physics

Quantum Physics · Answer Key · 12 Questions

1. Which scientist proposed that energy is emitted or absorbed in discrete 'quanta' to solve the ultraviolet catastrophe?

- A) Max Planck**
- B) Albert Einstein
- C) Niels Bohr
- D) Werner Heisenberg

2. In 1905, Albert Einstein explained the photoelectric effect by proposing that light consists of particles later named:

- A) Electrons
- B) Positrons
- C) Photons**
- D) Neutrons

3. The 1922 Nobel Prize in Physics was awarded to Niels Bohr for his research on:

- A) The discovery of the neutron
- B) The structure of atoms and their radiation**
- C) The theory of general relativity
- D) The development of quantum chromodynamics

4. Which principle, formulated in 1927, states that it is impossible to simultaneously know the precise position and momentum of a particle?

- A) Pauli exclusion principle
- B) Aufbau principle
- C) Heisenberg uncertainty principle**
- D) Le Chatelier's principle

5. Who was awarded the 1933 Nobel Prize in Physics for the discovery of 'productive forms of atomic theory'?

- A) Max Born and Pascual Jordan
- B) Erwin Schrödinger and Paul Dirac**
- C) Richard Feynman and Julian Schwinger
- D) Louis de Broglie and Max Planck

6. What concept did Louis de Broglie introduce in his 1924 doctoral thesis?

- A) Wave-particle duality of matter**
- B) The existence of antimatter
- C) Quantum entanglement
- D) Nuclear fission

7. Which scientist proposed the exclusion principle, stating that no two electrons in an atom can have the same four quantum numbers?

- A) Enrico Fermi
- B) Wolfgang Pauli**
- C) John von Neumann
- D) Robert Oppenheimer

8. The Davisson-Germer experiment in 1927 provided experimental evidence for the wave-like nature of which particle?

- A) Proton
- B) Neutron
- C) Electron**
- D) Alpha particle

9. In 1935, Albert Einstein, Boris Podolsky, and Nathan Rosen published a paper describing a paradox now known as:

- A) The EPR paradox**
- B) The twin paradox
- C) The grandfather paradox
- D) The ultraviolet catastrophe

10. Which physicist is credited with writing down the fundamental equation of motion for quantum mechanical systems in 1926?

- A) Werner Heisenberg
- B) Erwin Schrödinger**
- C) Max Born
- D) Hendrik Lorentz

11. Who received the 1935 Nobel Prize in Physics for the discovery of the neutron?

- A) James Chadwick**
- B) Ernest Rutherford
- C) J.J. Thomson
- D) Niels Bohr

12. The 'Solvay Conference' of 1927 is historically famous for the intense debates between which two physicists regarding the interpretation of quantum mechanics?

- A) Planck and Einstein
- B) Bohr and Einstein**
- C) Heisenberg and Schrödinger
- D) Dirac and Pauli