

Quantum Physics Trivia

Quantum Physics · Answer Key · 25 Questions

1. In what year did Max Planck introduce the idea that energy is radiated in discrete units called quanta?

- A) 1895
- B) 1900**
- C) 1905
- D) 1912

2. Which scientist was awarded the 1921 Nobel Prize in Physics specifically for his explanation of the photoelectric effect?

- A) Niels Bohr
- B) Werner Heisenberg
- C) Albert Einstein**
- D) Erwin Schrödinger

3. What is the approximate value of Planck's constant (h) in joule-seconds?

- A) 6.626×10^{-34}**
- B) 1.602×10^{-19}
- C) 9.109×10^{-31}
- D) 3.00×10^8

4. In 1927, who formulated the principle stating that one cannot simultaneously know the exact position and momentum of a particle?

- A) Wolfgang Pauli
- B) Max Born
- C) Werner Heisenberg**
- D) Louis de Broglie

5. How many fundamental forces of nature are recognized in the Standard Model of particle physics?

- A) 2
- B) 4**
- C) 6
- D) 8

6. Which Danish physicist proposed a model of the atom in 1913 where electrons travel in discrete orbits around the nucleus?

- A) Niels Bohr**
- B) Enrico Fermi
- C) Richard Feynman
- D) John Bell

7. The Pauli Exclusion Principle, formulated in 1925, states that two fermions cannot occupy the same what?

- A) Mass state
- B) Energy state
- C) Quantum state**
- D) Velocity state

8. What subatomic particle was discovered by James Chadwick in 1932?

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

9. In 1924, who proposed the hypothesis that matter particles like electrons also exhibit wave-like properties?

- A) Louis de Broglie**
- B) Paul Dirac
- C) Max Planck
- D) Walter Nernst

10. The Schrödinger equation, which describes how the quantum state of a physical system changes with time, was published in what year?

- A) 1921
- B) 1926**
- C) 1930
- D) 1935

11. What is the charge of a standard electron in coulombs, approximately?

- A) -1.602×10^{-19}**
- B) $+1.602 \times 10^{-19}$
- C) 0
- D) 9.109×10^{-31}

12. Who received the Nobel Prize in Physics in 1933 for the 'discovery of new productive forms of atomic theory'?

A) Erwin Schrödinger and Paul Dirac

B) Albert Einstein and Niels Bohr

C) Max Born and Werner Heisenberg

D) Louis de Broglie and Max Planck

13. How many quarks are required to form a single proton?

A) 1

B) 2

C) 3

D) 4

14. The 'Copenhagen Interpretation' of quantum mechanics is largely associated with the work of which physicist during the 1920s?

A) Niels Bohr

B) Richard Feynman

C) Stephen Hawking

D) Murray Gell-Mann

15. In 1928, who predicted the existence of antimatter by deriving an equation that combined quantum mechanics and special relativity?

A) Paul Dirac

B) Wolfgang Pauli

C) Werner Heisenberg

D) Enrico Fermi

16. What is the speed of light (c) in a vacuum, roughly measured in meters per second?

A) 300,000

B) 3,000,000

C) 30,000,000

D) 300,000,000

17. Which of these particles is considered a boson, the force-carrying particle in the Standard Model?

A) Electron

B) Proton

C) Neutron

D) Photon

18. The term 'quantum' was first used in the context of physics by Max Planck in the year 1900 to describe what?

A) Energy packets

B) Atomic weight

C) Magnetic fields

D) Light speed

19. What is the approximate mass of an electron in kilograms?

A) 9.11×10^{-31}

B) 1.67×10^{-27}

C) 6.63×10^{-34}

D) 1.60×10^{-19}

20. In what year did Richard Feynman receive the Nobel Prize in Physics for his work in quantum electrodynamics?

A) 1955

B) 1965

C) 1975

D) 1985

21. How many quantum numbers are used to completely describe the state of an electron in an atom?

A) 1

B) 2

C) 3

D) 4

22. Who performed the famous Double-Slit experiment in 1801, which later became fundamental to quantum wave-particle duality?

A) Thomas Young

B) Isaac Newton

C) Michael Faraday

D) James Clerk Maxwell

23. The concept of 'spin' in quantum mechanics was introduced in 1925 by which two physicists?

A) Uhlenbeck and Goudsmit

B) Bohr and Einstein

C) Dirac and Born

D) Heisenberg and Pauli

24. Which scientist is credited with the discovery of the positron in 1932?

A) Carl Anderson

B) J.J. Thomson

C) Ernest Rutherford

D) Marie Curie

25. In 1945, which physicist developed the theory of quantum electrodynamics (QED) alongside Tomonaga and Schwinger?

A) Richard Feynman

B) Niels Bohr

C) Albert Einstein

D) Werner Heisenberg