

# Quantum Physics for Curious Minds

Quantum Physics · Answer Key · 8 Questions

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**1. What is the name of the phenomenon where particles can pass through energy barriers that would be impossible to cross in classical physics?**

- A) Quantum Tunneling**
- B) Superposition
- C) Entanglement
- D) Wave-Particle Duality

**2. Which fundamental principle states that it is impossible to know both the exact position and the exact momentum of a particle at the same time?**

- A) The Pauli Exclusion Principle
- B) Heisenberg Uncertainty Principle**
- C) Schrödinger's Law
- D) The Photoelectric Effect

**3. In quantum mechanics, what is the term for a particle existing in multiple states simultaneously until it is observed or measured?**

- A) Decoherence
- B) Quantum Spin
- C) Superposition**
- D) The Observer Effect

**4. Which scientist received the Nobel Prize for explaining the photoelectric effect, showing that light behaves as discrete packets of energy called photons?**

- A) Niels Bohr
- B) Richard Feynman
- C) Max Planck
- D) Albert Einstein**

**5. According to the Pauli Exclusion Principle, which type of particles cannot occupy the exact same quantum state simultaneously within a system?**

- A) Fermions**
- B) Bosons
- C) Photons
- D) Gluons

**6. What is the smallest unit of electromagnetic radiation, often described as a 'packet' of light energy?**

- A) Electron
- B) Quark
- C) Photon**
- D) Neutrino

**7. What is the term for the mysterious connection between two particles where the state of one instantly influences the state of the other, regardless of distance?**

- A) Quantum Teleportation
- B) Quantum Entanglement**
- C) Spooky Action at a Distance
- D) Non-locality

**8. What is the name of the constant, represented by the letter 'h', that relates the energy of a photon to its frequency?**

- A) Planck's Constant**
- B) The Gravitational Constant
- C) The Fine-Structure Constant
- D) Boltzmann's Constant