

Quantum Physics in the Universe

Quantum Physics · Practice Test · 15 Questions

1. What is the smallest unit of light, which behaves like a particle in quantum physics?

- A) Atom
- B) Photon
- C) Electron
- D) Proton

2. Which force keeps the stars in our galaxy bound together, acting on a much larger scale than quantum forces?

- A) Gravity
- B) Magnetism
- C) Friction
- D) Static electricity

3. What happens to the energy levels of electrons in an atom when they move between orbits?

- A) They disappear
- B) They become infinite
- C) They change by specific amounts
- D) They stay the same

4. Which famous scientist is known for the equation $E=mc^2$, which relates energy and mass in the universe?

- A) Isaac Newton
- B) Nikola Tesla
- C) Albert Einstein
- D) Galileo Galilei

5. What is the term for the state where a particle exists in multiple possible locations at once before it is observed?

- A) Superposition
- B) Gravity
- C) Fusion
- D) Reflection

6. What process powers the Sun by fusing hydrogen into helium, involving quantum tunneling?

- A) Combustion
- B) Nuclear fusion
- C) Chemical reaction
- D) Evaporation

7. Which fundamental particle is a key building block of all matter, including planets?

- A) Galaxy
- B) Atom
- C) Nebula
- D) Comet

8. What do quantum physicists call the discrete 'packets' of energy?

- A) Waves
- B) Quanta
- C) Solid
- D) Gas

9. What determines the color of light emitted by a star based on the energy of its photons?

- A) Its frequency
- B) Its shape
- C) Its size
- D) Its mass

10. Which subatomic particle orbits the nucleus of an atom?

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

11. What is the name of the theory that describes the behavior of matter and energy at the smallest scale?

- A) Quantum mechanics
- B) Relativity
- C) Thermodynamics
- D) Optics

12. In the vacuum of space, what is the maximum speed at which information and light can travel?

- A) The speed of sound
- B) The speed of light
- C) The speed of gravity
- D) The speed of an electron

13. Which heavy subatomic particle is found inside the nucleus of an atom alongside the proton?

- A) Electron
- B) Neutron
- C) Photon
- D) Ion

14. What prevents atoms from collapsing, maintaining the structure of planets and stars?

- A) Quantum uncertainty
- B) Air pressure
- C) Wind
- D) Magnetism

15. What is the most abundant element in the universe, consisting of a single proton and electron?

- A) Helium
- B) Oxygen
- C) Hydrogen
- D) Carbon