

# Physical Science Essentials

Physical Science · Answer Key · 20 Questions

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**1. Which fundamental force is responsible for the radioactive decay of atomic nuclei?**

- A) Strong nuclear force
- B) Weak nuclear force**
- C) Electromagnetic force
- D) Gravitational force

**2. What is the term for the process by which a solid transitions directly into a gas without passing through the liquid phase?**

- A) Condensation
- B) Evaporation
- C) Sublimation**
- D) Deposition

**3. In thermodynamics, what does the Second Law state regarding entropy in an isolated system?**

- A) It remains constant
- B) It decreases over time
- C) It increases over time**
- D) It is always zero

**4. Which subatomic particle has a mass approximately 1836 times greater than that of an electron?**

- A) Neutron**
- B) Photon
- C) Muon
- D) Neutrino

**5. According to the Heisenberg Uncertainty Principle, which pair of variables cannot be simultaneously measured with absolute precision?**

- A) Mass and velocity
- B) Position and momentum**
- C) Energy and time
- D) Force and acceleration

**6. What is the correct order of the electromagnetic spectrum from lowest to highest frequency?**

- A) Radio, Infrared, Visible, X-ray**
- B) Gamma, Ultraviolet, Visible, Radio
- C) Radio, Microwave, X-ray, Infrared
- D) X-ray, Visible, Infrared, Radio

**7. Which scientist is credited with discovering the principle of buoyancy while in a bathtub?**

- A) Isaac Newton
- B) Galileo Galilei
- C) Archimedes**
- D) Blaise Pascal

**8. What is the chemical property that describes an atom's ability to attract a shared pair of electrons in a covalent bond?**

- A) Ionization energy
- B) Electronegativity**
- C) Electron affinity
- D) Valency

**9. In special relativity, what happens to an object's mass as its velocity approaches the speed of light?**

- A) It remains constant
- B) It decreases
- C) It increases**
- D) It reaches zero

**10. What is the primary constituent of the Earth's atmosphere by volume?**

- A) Oxygen
- B) Carbon Dioxide
- C) Argon
- D) Nitrogen**

**11. What type of lens is required to correct myopia (nearsightedness)?**

- A) Concave**
- B) Convex
- C) Cylindrical
- D) Bifocal

**12. Which temperature scale is defined such that absolute zero is 0 degrees?**

- A) Celsius
- B) Fahrenheit
- C) Kelvin**
- D) Rankine

**13. What is the unit of measure for electrical resistance?**

- A) Volt
- B) Ampere
- C) Ohm**
- D) Watt

**14. Which element has the highest melting point of all pure chemical elements?**

- A) Tungsten**
- B) Carbon
- C) Platinum
- D) Osmium

**15. What phenomenon causes light to bend as it passes from one medium to another of different density?**

- A) Reflection
- B) Diffraction
- C) Refraction**
- D) Polarization

**16. What is the most abundant element in the observable universe?**

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

**17. Which law states that the force between two point charges is directly proportional to the product of the charges and inversely proportional to the square of the distance between them?**

- A) Ohm's Law
- B) Coulomb's Law**
- C) Faraday's Law
- D) Gauss's Law

**18. What is the molecular geometry of a methane molecule (CH<sub>4</sub>)?**

- A) Linear
- B) Bent
- C) Tetrahedral**
- D) Trigonal planar

**19. Which particle is responsible for carrying the electromagnetic force?**

- A) Gluon
- B) Graviton
- C) Photon**
- D) W boson

**20. In a vacuum, do all objects fall with the same acceleration regardless of their mass?**

- A) Yes**
- B) No, heavier objects fall faster
- C) No, lighter objects fall faster
- D) Only if they are spherical