

Foundational Scientific Principles

Basic Science · Answer Key · 10 Questions

1. What is the approximate speed of light in a vacuum, a fundamental constant in physics?

- A) 150,000 kilometers per second
- B) 299,792 kilometers per second**
- C) 384,400 kilometers per second
- D) 7,200 kilometers per second

2. Which element's atomic number is 6, forming the backbone of organic chemistry?

- A) Oxygen
- B) Nitrogen
- C) Carbon**
- D) Silicon

3. In cellular biology, which organelle is often referred to as the 'powerhouse' of the cell due to its role in energy production?

- A) Nucleus
- B) Ribosome
- C) Endoplasmic Reticulum
- D) Mitochondrion**

4. What is the chemical formula for common table salt?

- A) H₂O
- B) CO₂
- C) NaCl**
- D) KCl

5. According to Newton's first law of motion, an object at rest will stay at rest, and an object in motion will stay in motion with the same speed and in the same direction unless acted upon by an external force. What is this principle commonly known as?

- A) Law of Conservation of Energy
- B) Law of Inertia**
- C) Law of Action-Reaction
- D) Law of Universal Gravitation

6. What is the process by which plants convert light energy into chemical energy, producing glucose and oxygen?

- A) Respiration
- B) Transpiration
- C) Photosynthesis**
- D) Fermentation

7. What is the most abundant gas in Earth's atmosphere?

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

8. What is the scientific term for the process where a liquid changes into a solid?

- A) Vaporization
- B) Condensation
- C) Melting
- D) Freezing**

9. What fundamental force is responsible for holding atoms together by binding electrons to the nucleus?

- A) Gravitational Force
- B) Weak Nuclear Force
- C) Strong Nuclear Force
- D) Electromagnetic Force**

10. What is the basic unit of inheritance that is passed from parents to offspring?

- A) Cell
- B) Chromosome
- C) Gene**
- D) Protein