

Foundational Biology Concepts

Introduction To Biology · Answer Key · 10 Questions

1. Which of the following is the primary function of a lysosome within a eukaryotic cell?

- A) Energy production through cellular respiration
- B) Synthesis of proteins
- C) Degradation of cellular waste and debris**
- D) Storage of genetic material

2. The process by which organisms change over time through inheritable traits is known as:

- A) Homeostasis
- B) Metabolism
- C) Photosynthesis
- D) Evolution**

3. What is the fundamental unit of heredity that is passed from parents to offspring?

- A) Chromosome
- B) Mitochondrion
- C) Gene**
- D) Ribosome

4. Which biological molecule is responsible for carrying the genetic instructions for the development, functioning, growth, and reproduction of all known organisms and many viruses?

- A) Protein
- B) RNA
- C) Lipid
- D) DNA**

5. The classification system used to group organisms based on shared characteristics, with a hierarchical structure, was largely developed by:

- A) Charles Darwin
- B) Gregor Mendel
- C) Louis Pasteur
- D) Carl Linnaeus**

6. What is the name of the process by which plants convert light energy into chemical energy, in the form of glucose?

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

7. The intricate network of organisms and their physical environment interacting as a system is referred to as an:

- A) Ecosystem**
- B) Habitat
- C) Niche
- D) Community

8. Which organelle is known as the 'powerhouse' of the cell because it generates most of the cell's supply of adenosine triphosphate (ATP), used as a source of chemical energy?

- A) Nucleus
- B) Endoplasmic reticulum
- C) Golgi apparatus
- D) Mitochondrion**

9. The theory that states all living organisms are composed of cells, that cells are the basic unit of life, and that all cells come from pre-existing cells is known as:

- A) Theory of Evolution
- B) Theory of Natural Selection
- C) Cell Theory**
- D) Theory of Spontaneous Generation

10. What term describes the maintenance of a stable internal environment in living organisms, despite changes in the external environment?

- A) Adaptation
- B) Homeostasis**
- C) Biodiversity
- D) Symbiosis