

# Foundations of Biology

Biology · Practice Test · 12 Questions

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**1. Which organelle is primarily responsible for the synthesis of adenosine triphosphate (ATP) during aerobic respiration?**

- A) Nucleus
- B) Mitochondrion
- C) Ribosome
- D) Golgi apparatus

**2. According to the cell theory, which of the following statements is correct?**

- A) All cells contain a membrane-bound nucleus.
- B) Cells are formed by spontaneous generation.
- C) All living organisms are composed of one or more cells.
- D) Only eukaryotic cells perform metabolic processes.

**3. In the hierarchical classification system, which taxonomic rank is the most inclusive?**

- A) Family
- B) Genus
- C) Order
- D) Phylum

**4. Which nitrogenous base is found in RNA but not in DNA?**

- A) Uracil
- B) Thymine
- C) Adenine
- D) Cytosine

**5. What is the primary function of the rough endoplasmic reticulum?**

- A) Lipid synthesis
- B) Protein synthesis and transport
- C) DNA replication
- D) Waste decomposition

**6. During which phase of mitosis do chromosomes align at the cell's equatorial plane?**

- A) Prophase
- B) Anaphase
- C) Telophase
- D) Metaphase

**7. Which biological molecule is classified as a polymer of amino acids?**

- A) Starch
- B) Polynucleotide
- C) Protein
- D) Triglyceride

**8. What is the role of enzymes in chemical reactions within a cell?**

- A) To consume energy for every reaction
- B) To increase the activation energy
- C) To act as a biological catalyst to lower activation energy
- D) To serve as the final product of metabolic pathways

**9. Which process describes the movement of water molecules across a semi-permeable membrane from an area of higher water concentration to lower water concentration?**

- A) Active transport
- B) Osmosis
- C) Facilitated diffusion
- D) Exocytosis

**10. What is the primary product of photosynthesis in green plants?**

- A) Glucose
- B) Carbon dioxide
- C) Nitrogen
- D) ATP

**11. Which part of the eukaryotic cell contains the majority of the genetic material?**

- A) Cytoplasm
- B) Nucleus
- C) Vacuole
- D) Cell wall

**12. Which component of the cell membrane helps maintain its fluidity and stability?**

- A) Cholesterol
- B) Phospholipid head
- C) Integral protein
- D) Peripheral protein