

BIOLOGICAL EVOLUTION QUIZ

Part I – Multiple Choice

1. Which statement best describes biological evolution?

- A. A change in inherited characteristics of populations over generations
- B. A change that occurs only during an organism's lifetime
- C. The process by which an individual chooses useful traits
- D. The development of identical traits in every organism

2. What is natural selection?

- A. The inheritance of traits acquired during an individual's lifetime
- B. The process in which inherited traits affecting survival or reproduction become more or less common
- C. The process that creates new species in a single generation
- D. The random production of identical organisms

3. Which observation provides evidence for common ancestry among different species?

- A. Homologous structures with similar underlying anatomy
- B. Different species always living in exactly the same habitat
- C. All organisms having exactly the same DNA sequence
- D. Organisms never changing over time

4. What is a fossil?

- A. A newly formed mutation in living DNA
- B. A modern organism with no evolutionary history
- C. A preserved remain or trace of an ancient organism
- D. A trait that an organism learns during development

5. A population of insects contains individuals with different levels of resistance to a pesticide. After repeated pesticide use, resistant insects leave more offspring. Over many generations, resistance becomes more common. Which process best explains this change?

- A. Natural selection
- B. Genetic drift only
- C. Artificial selection by the insects
- D. Acquired inheritance

6. What is speciation?

- A. The formation of new species from existing populations
- B. The growth of an individual organism
- C. The movement of an organism from one habitat to another
- D. The disappearance of every organism in a population

Part II – Select All That Apply

Directions: Select ALL answers that are correct.

7. Which factors can contribute to genetic variation in a population?

- A. Mutation
- B. Genetic recombination during sexual reproduction
- C. Gene flow between populations
- D. An organism changing its behavior during its lifetime

8. Which statements describe ways that populations can become genetically different from one another?

- A. Different mutations can arise in different populations.
 - B. Natural selection can favor different traits in different environments.
 - C. Genetic drift can change allele frequencies differently by chance.
 - D. Every population must have exactly the same allele frequencies.
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Part III – True or False

Directions: Write **T** or **F** on the line.

9. _____ Individuals evolve genetically during their own lifetimes as a result of natural selection.

10. _____ Genetic drift is a random change in allele frequencies that can have a stronger effect in small populations.
