🧬 Mississippi 8th Grade Science Practice Quiz – Evolution and Natural Selection

Questions 1–3: Darwin & Principles of Natural Selection

1. Charles Darwin proposed that organisms best suited to their environment are more likely to survive and reproduce. What is this process called?
A) Selective breeding
B) Natural selection
C) Artificial selection
D) Mutation

2. Which observation helped Darwin form his theory of natural selection?
A) All species remain unchanged over time.
B) Organisms overproduce offspring, but not all survive.
C) Each organism has the same chance of survival.
D) Organisms cannot adapt to environmental change.

3. A population of beetles lives on green leaves. Over time, green beetles become more common than brown beetles. What is the most likely explanation?
A) Green beetles are more easily seen by predators.
B) Brown beetles reproduce more slowly.
C) Green beetles blend in with leaves and survive longer to reproduce.
D) Brown beetles migrate to other areas.

Questions 4–6: Natural Selection and Trait Frequency Over Time

4. A drought causes plants with small seeds to die out, leaving mostly large seeds. Birds with larger beaks survive and reproduce more than those with small beaks. What will likely happen to the population over time?
A) The average beak size will decrease.
B) The average beak size will increase.
C) Beak size will remain unchanged.
D) Birds will stop reproducing.

5. Which of the following best explains how natural selection can change a population over time?
A) Individuals change their traits to survive.
B) Acquired traits are passed on to offspring.
C) Organisms choose which traits to inherit.
D) Traits that improve survival become more common in the population.

6. A scientist observes that a population of moths has shifted from mostly light-colored to mostly dark-colored moths after a volcanic eruption darkened tree bark. Which conclusion is most supported by this data?
A) The light-colored moths decided to camouflage.
B) The moths changed color to match the bark.
C) The environment favored dark moths, increasing their frequency over time.
D) The eruption caused mutations in all moths.

Questions 7–8: Speciation

7. A population of frogs becomes separated by a river that forms a deep canyon. Over thousands of years, the two groups develop different mating calls and no longer interbreed. This is an example of:
A) Mutation
B) Speciation
C) Artificial selection
D) Natural variation

8. Which statement best explains how speciation occurs?
A) New species form when populations are geographically isolated and evolve independently.
B) Species remain the same even when separated.
C) Natural selection stops working after isolation.
D) Populations merge and become identical.

Questions 9–10: Embryological & Anatomical Evidence for Evolution

9. Which observation provides the strongest evidence that two species share a common ancestor?
A) They live in the same habitat.
B) Their embryos show similar patterns of development.
C) They eat the same type of food.
D) They have different numbers of bones in their limbs.

10. Which statement best describes homologous and analogous structures?
A) Homologous and analogous structures are identical in every way.
B) Homologous structures have different origins and functions.
C) Analogous structures are inherited from the same ancestor.
D) Homologous structures have a similar origin but different functions; analogous structures have different origins but similar functions.