

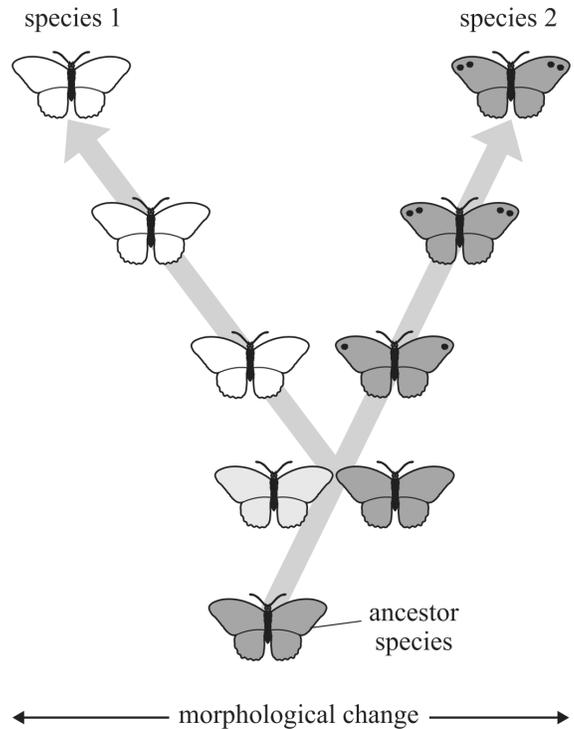
Evolution

Name: _____

Date: _____

- Geologic activity on an island physically separates a population of animals into two populations. Many generations later, when the two populations are no longer separated, they do not interbreed. What was the result of natural selection during this period of separation?
 - a decrease in variation
 - a decrease in diversification
 - an increase in extinction
 - an increase in speciation
- Which is the *best* evidence that two species have a common ancestor?
 - The two species have the same diet.
 - The two species live in the same habitat.
 - The two species' DNA sequences are 90% identical.
 - The two species' skeletal structures are 90% identical.
- Which statement about fossils could be used as evidence that evolution by natural selection has been in effect for millions of years?
 - Fossils found in higher layers of rock are older than those found in lower layers.
 - Fossils found in lower layers of rock are more complex than those found in higher layers.
 - Fossils of current species have been found throughout rock layers that are billions of years old.
 - Fossils of species that no longer exist but are ancestors of current species have been found in rock layers.

- The illustration below shows the morphological change of two species.



Which statement explains why species 1 and species 2 are different?

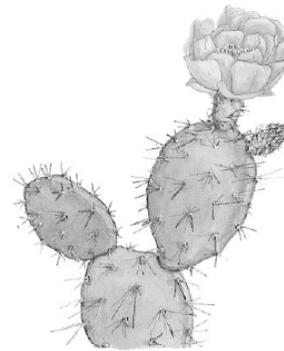
- An individual changed itself to suit the environment.
- Natural selection can cause gradual speciation changes.
- Interbreeding of species 2 results in no genetic mutations.
- Extinction of ancestor species occurs as a result of interbreeding.

5. A tree frog population lives in the canopy of a tropical rain forest. In this tree frog population, a mutation occurs that results in a new allele for skin coloration causing stripes on their legs.

Which of the following factors has the *greatest* effect on whether leg stripes will become more common in the tree frog population?

- A. if the reproduction rate of the tree frog population remains constant over time
 - B. if the new allele for stripes is dominant or recessive in the tree frog population
 - C. if the new allele for stripes increases the survival of the tree frogs in their environment
 - D. if enough food and water is available in the rain forest canopy for the tree frog population
6. How is natural selection in the evolution of long necks in giraffes *best* explained?
- A. Shorter-necked giraffes were killed by long-necked giraffes.
 - B. Giraffe necks grew longer because of the bone structure of the animals.
 - C. Giraffes with longer necks survived because they were better suited to the environment.
 - D. Long-necked giraffes mated only with other long-necked giraffes.
7. Rainfall in a tropical region is below average for 10 consecutive years. Insect species adapted for dry conditions are much more plentiful at the end of the 10 years. Which of the following statements best explains the increase in the population of these insects?
- A. Biodiversity in the region has increased due to the dry conditions.
 - B. Insects with a high tolerance for dry conditions have migrated out of the region.
 - C. Natural selection has favored insect species with a high tolerance for dry conditions.
 - D. Natural selection has selected against insect species that are adapted for dry conditions.

8. Which of these *best* illustrates natural selection?
- A. An organism with favorable genetic variations will tend to survive and breed successfully.
 - B. A population monopolizes all of the resources in its habitat, forcing other species to migrate.
 - C. A community whose members work together utilizes all existing resources and migratory routes.
 - D. The largest organisms in a species receive the only breeding opportunities.
9. A small portion of a population that is geographically isolated from the rest of the population runs the risk of decreased
- A. genetic drift.
 - B. mutation rate.
 - C. natural selection.
 - D. genetic variation.
10. Use the picture below to answer the question.



The cactus plant shown above lives in a desert environment.

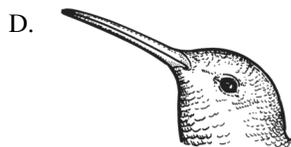
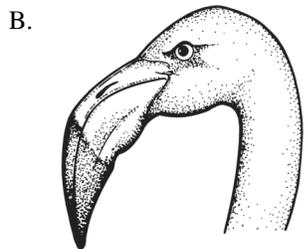
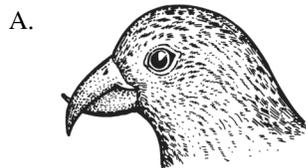
Which characteristic of this plant could be found in many other desert plants?

- A. a deep root system for gathering water
- B. lush growth that serves to trap water if it rains
- C. broad leaves that protect the plants from the hot sun
- D. leaves and stems that are adapted to conserve water

11. The picture below shows a flower with a long slender bloom.



The size and shape of a bird's beak are related to the type of food that the bird eats. Which of the following beaks is suitable for drinking nectar located deep within flowers such as the one shown above?



12. A species of finch has been studied on one of the geographically isolated Galapagos Islands for many years. Since the island is small, the lineage of every bird for several generations is known. This allows a family tree of each bird to be developed. Some family groups have survived and others have died out. The groups that survive *probably* have

- A. interbred with other species.
- B. inherited some advantageous variations.
- C. found new places on the island to live.
- D. been attacked by more predators.

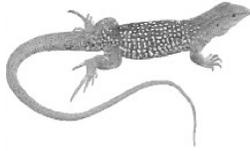
13. A population of termites initially consists of darkly colored and brightly colored members. After several generations, the termite population consists almost entirely of darkly colored members because the brightly colored termites are easier for a predatory species of insectivores to locate. This situation is an example of

- A. the evolution of a new species.
- B. natural selection.
- C. artificial selection.
- D. adaptive radiation.

14. Frogs, lizards, and birds all have a similar arrangement of bones in their limbs. Which of the following does this similarity *most likely* indicate about these animals?

- A. They move in the same way.
- B. They have a common ancestry.
- C. They evolved at the same time.
- D. They are comparable in size as adults.

15. The Canyon spotted whiptail and the Sonoran spotted whiptail are lizard species that live in the same desert. The Canyon spotted whiptail is composed of males and females that reproduce sexually. The Sonoran spotted whiptail is an all-female species that reproduces asexually.



Canyon Spotted Whiptail



Sonoran Spotted Whiptail

Which lizard species is more likely to survive a drastic sudden change in climate?

- A. Sonoran spotted whiptail because all members of the species can reproduce
- B. The Sonoran spotted whiptail because their genetic similarities will keep the species stable
- C. The Canyon spotted whiptail because their genetic differences improve their chances of adapting
- D. The Canyon spotted whiptail because species with male and female members produce more offspring

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1.
Answer: D
2.
Answer: C
3.
Answer: D
4.
Answer: B
5.
Answer: C
6.
Answer: C
7.
Answer: C
8.
Answer: A
9.
Answer: D
10.
Answer: D
11.
Answer: D
12.
Answer: B
13.
Answer: B
14.
Answer: B
15.
Answer: C