

Animal Behavior and Evolution

Name: _____

Date: _____

1. Western coral snakes have a striped color pattern and are poisonous. Arizona mountain kingsnakes look like western coral snakes but are not poisonous.

The color pattern of the Arizona mountain kingsnake is an example of

- A. camouflage. B. mimicry.
C. mutualism. D. parasitism.

2. 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. a decrease in variation
B. a decrease in diversification
C. an increase in extinction
D. an increase in speciation

3. A termite population was sprayed with a certain brand of insecticide. After being sprayed, the number of surviving termites within the population were counted and recorded as a percentage of the total. This process was repeated until a total of six generations of termites had been sprayed. The results are shown in the table below.

| Termite Generation | Percentage of Surviving Termites After Spraying |
|--------------------|---|
| 1 | 5% |
| 2 | 10% |
| 3 | 25% |
| 4 | 40% |
| 5 | 60% |
| 6 | 80% |

Which statement *best* explains why later generations had higher percentages of termites that survived?

- A. Earlier generations had several members that were old and weak.
B. Earlier generations had smaller numbers of termites than later generations.
C. Later generations were able to live through the spraying because they were used to it.
D. Later generations were the offspring of termites that were more resistant to the spraying.

4. Which statement about fossils could be used as evidence that evolution by natural selection has been in effect for millions of years?
- A. Fossils found in higher layers of rock are older than those found in lower layers.
 - B. Fossils found in lower layers of rock are more complex than those found in higher layers.
 - C. Fossils of current species have been found throughout rock layers that are billions of years old.
 - D. Fossils of species that no longer exist but are ancestors of current species have been found in rock layers.

5. 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.

6. The diet of white-tailed deer consists primarily of shrubs. Sika are another species of deer that eat both grasses and shrubs. After an extended drought period, why might the sika population be favored over the white-tailed deer population?
- A. Sika require less food than do the white-tailed deer.
 - B. Sika require more water than do the white-tailed deer.
 - C. Sika have more food sources than do the white-tailed deer.
 - D. Sika have fewer food sources than do the white-tailed deer.

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 single species of squirrel evolved over time into two species, each on opposite sides of the Grand Canyon. This change was *most* likely due to
- A. higher mutation rates on one side.
 - B. low genetic diversity in the initial population.
 - C. the isolation of the two groups.
 - D. differences in reproductive rates.

10. Vestigial structures, such as hip bones in whales and appendixes in humans, are those that have little or no function for the organism. What is the most likely reason for this loss of function over time?
- A. The organism is undergoing speciation.
 - B. The organism is experiencing genetic drift.
 - C. The structure was over utilized by the organism.
 - D. The structure was not highly beneficial to the organism.

11. The arctic fox and gray wolf are two examples of animals that change the color of their fur with the seasons. In the summer, the animals are a brownish color, and in the winter, they turn white. The change of color helps the animals to survive.

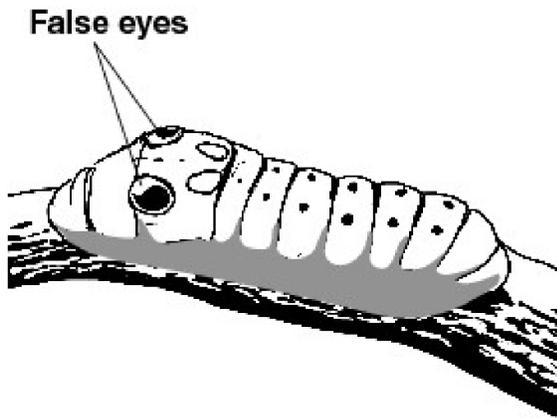
Which of the following provides the *best* explanation for this change?

- A. The color change helps protect them from predators.
- B. The color change helps them raise their young.
- C. The color change helps them regulate their body temperature better.
- D. The color change helps them be seen from a great distance.

12. The caterpillar has two large spots that look like large eyes as shown.

How do these large false eyes help the caterpillar survive?

Swallowtail Caterpillar



- A. They allow the caterpillar to see farther than other insects.
- B. They allow the caterpillar to scare away predators.
- C. They allow the caterpillar to move around at night.
- D. They allow the caterpillar to find more food.

13. When meiosis and fertilization occur, genes from both parents are combined, producing unique offspring.

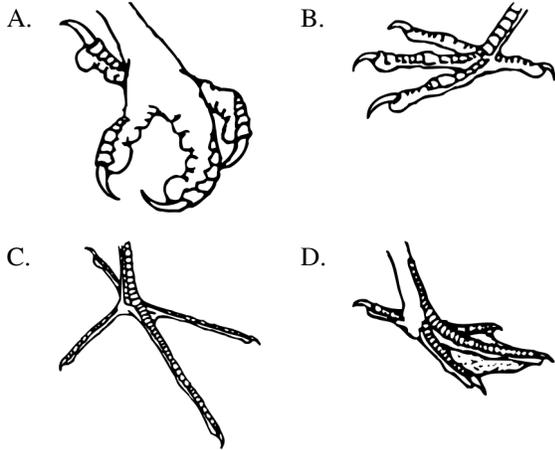
How does this benefit a species?

- A. The production of more cells leads to faster population growth.
- B. Greater genetic variation increases the chances for survival of a species.
- C. The mixing of parent genes reduces the chance of mutation in a species.
- D. The variation between individuals decreases competition for resources.

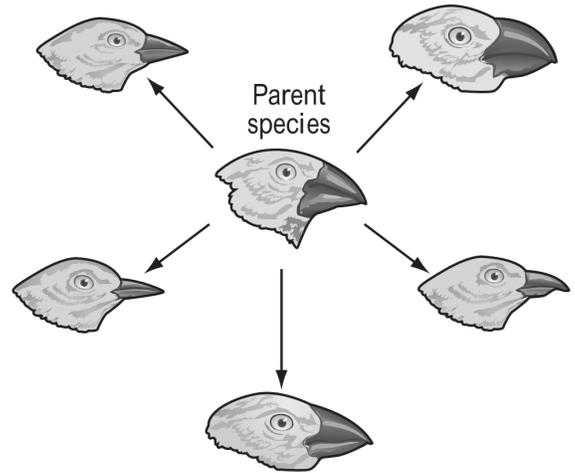
14. Which example describes a behavioral adaptation?

- A. A bird builds its nest in the ash near a volcano.
- B. A whale has the ability to hold its breath for 20 minutes.
- C. A fox's hair is white in the winter and brown in the summer.
- D. A monkey has long arms that allow it to swing from one branch to another.

15. Which bird's foot below is best for grasping prey?



16. The diagram below shows the beaks of five species of birds that developed over time from one parent species. The five species of birds can be found living in the same area.



Which of the following *best* explains why the beak shape of each species of bird developed differently?

- A. Each beak shape helps the birds to produce different songs.
- B. Each beak shape is an adaptation to a specific source of food.
- C. Each beak shape is designed to construct a different type of nest.
- D. Each beak shape helps protect the birds from a different predator.

1.
Answer: B
2.
Answer: D
3.
Answer: D
4.
Answer: D
5.
Answer: C
6.
Answer: C
7.
Answer: C
8.
Answer: A
9.
Answer: C
10.
Answer: D
11.
Answer: A
12.
Answer: B
13.
Answer: B
14.
Answer: A
15.
Answer: A
16.
Answer: B