

Evolution MCAS Practice

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
- 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?

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

- 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.
- 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?

- if the reproduction rate of the tree frog population remains constant over time
- if the new allele for stripes is dominant or recessive in the tree frog population
- if the new allele for stripes increases the survival of the tree frogs in their environment
- if enough food and water is available in the rain forest canopy for the tree frog population

5. How is natural selection in the evolution of long necks in giraffes *best* explained?
- Shorter-necked giraffes were killed by long-necked giraffes.
 - Giraffe necks grew longer because of the bone structure of the animals.
 - Giraffes with longer necks survived because they were better suited to the environment.
 - Long-necked giraffes mated only with other long-necked giraffes.
6. Which of the following is a source of genetic variation within a species?
- cloning
 - mutation
 - selective breeding
 - natural selection
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?
- Biodiversity in the region has increased due to the dry conditions.
 - Insects with a high tolerance for dry conditions have migrated out of the region.
 - Natural selection has favored insect species with a high tolerance for dry conditions.
 - Natural selection has selected against insect species that are adapted for dry conditions.
8. Which of these *best* illustrates natural selection?
- An organism with favorable genetic variations will tend to survive and breed successfully.
 - A population monopolizes all of the resources in its habitat, forcing other species to migrate.
 - A community whose members work together utilizes all existing resources and migratory routes.
 - The largest organisms in a species receive the only breeding opportunities.

9. Over time, new species have evolved while others have become extinct.

A male horse and a female donkey can be bred to produce an offspring known as a mule. This is possible because the two parents _____.

- have adapted to similar environments
- are domesticated mammals
- are almost genetically identical
- eat the same types of foods

- 10.
-
- 300 million years ago pelycosaur
- 250 million years ago early therapsid
- 150 million years ago later therapsid
- 1 million years ago mammal

The fossilized jawbones in the diagram above show the changes in organisms over time. According to the diagrams, which of the following is a likely conclusion?

- These fossils provide evidence that evolution occurs rapidly.
- These fossils provide evidence that evolution occurs over long periods of time.
- These fossils belonged to organisms that were large and slow moving.
- These fossils lack similar characteristics in their structural design.

11. 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.

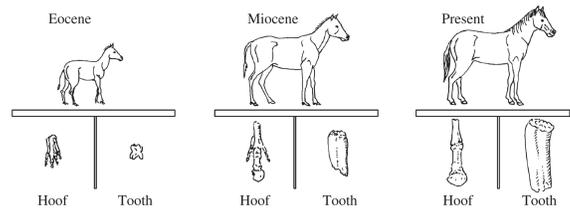
12. Few flowers are able to grow on the northern arctic tundra. Those that do grow there have very short stems. How is this an adaptation to help them survive in the arctic climate?

- A. It protects them from freezing.
- B. It prevents them from being eaten by consumers.
- C. It protects them from breaking in strong winds.
- D. It makes it very hard for them to be pulled from the ground.

13. Tomato plants grow in warm weather. If the temperature drops below 32°F for two days in a row, what will *most likely* happen to the tomato plants?

- A. They will die.
- B. They will migrate.
- C. They will hibernate.
- D. They will grow faster.

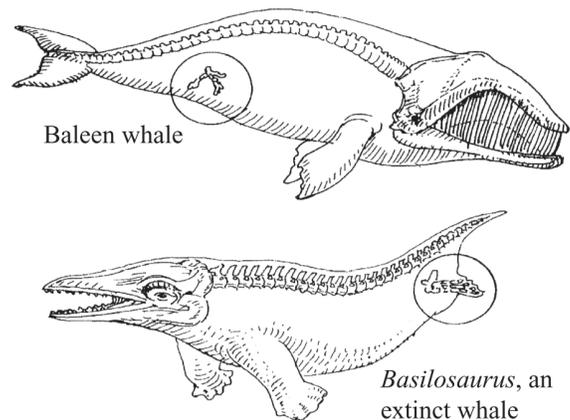
14. The diagram below represents part of the horse fossil record from three time periods. It includes illustrations of the hooves and teeth of horses from each time period.



Which of the following statements is *best* supported by the horse fossil record?

- A. The horse has been a carnivore.
- B. The horse has changed over time.
- C. The horse has many common ancestors.
- D. The horse has lived in the same ecosystem.

15. The illustrations below show vestigial pelvic bones of a baleen whale and vestigial hind limb bones of an extinct whale.



The presence of these bones in the baleen whale and extinct whale provides evidence of which of the following?

- A. Whales can travel on land when necessary.
- B. Whales evolved from four-legged animals.
- C. Whales have functional legs that are hidden by fat and skin.
- D. Whales are developing into animals with four functioning limbs.

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