

Name: \_\_\_\_\_

Date: \_\_\_\_\_

KEY

## EVOLUTION PRACTICE

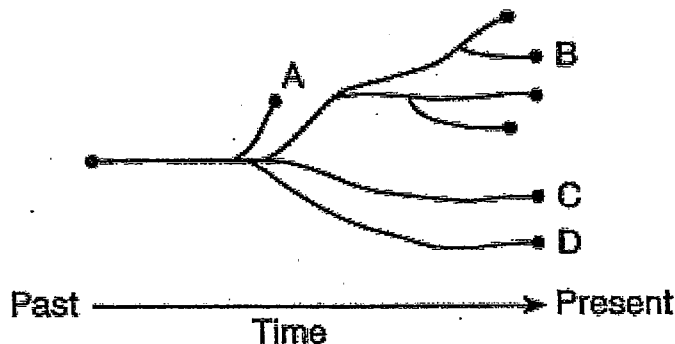
1. Which population of organisms would be in greatest danger of becoming extinct?
  - A) A population of organisms having few variations living in a stable environment.
  - ☒ B) A population of organisms having few variations living in an unstable environment.
  - C) A population of organisms having many variations living in a stable environment.
  - D) A population of organisms having many variations living in an unstable environment.
2. Which statement is NOT part of the concept of natural selection?
  - A) Individuals that possess the most favorable variations will have the best chance of reproducing.
  - B) Variation occurs among individuals in a population.
  - C) More individuals are produced than will survive.
  - ☒ D) Genes of an individual adapt to a changing environment.
3. What statement best illustrates a rapid biological adaptation that has actually occurred?
  - ☒ A) Pesticide-resistant insects have developed in certain environments.
  - B) Scientific evidence indicates that dinosaurs once lived on land.
  - C) Paving large areas of land has decreased habitats for certain organisms.
  - D) The characteristics of sharks have remained unchanged over a long period of time.
4. Which statement best describes a current understanding of natural selection?
  - ☒ A) Natural selection influences the frequency of an adaptation in a population.
  - B) Natural selection has been discarded as an important concept in evolution.
  - C) Changes in gene frequencies due to natural selection have little effect on the evolution of species.
  - D) New mutations of genetic material are due to natural selection.
5. Which species is most likely to survive changing environmental conditions?
  - A) A species that has few variations
  - ☒ B) A species that reproduces sexually
  - C) A species that competes with similar species
  - D) A species that has a limited life span
6. Fireflies have the ability to produce their own light. Which statement describes how this inherited trait **most likely** helps fireflies survive?
  - A) Both males and females shine their lights to attract predators.
  - ☒ B) Both males and females use their lights to find each other in darkness
  - C) Male fireflies shine their light on plants at night so plants can photosynthesize.
  - D) Female fireflies use their light to help their offspring locate food in dark areas.
7. A species adapts to an environmental change. Which process **most likely** allows this species to be able to survive and reproduce in this changing environment?
  - A) extinction
  - B) respiration
  - C) cell division
  - ☒ D) natural selection

8. Based on the fossil record of a species, evidence suggests that the tail length of the species has decreased. Which statement described how this change **most likely** occurred?

- A) Genetic adaptations occurred over long periods of time.
- B) Recessive genes were passed from parents to offspring.
- C) Individuals changed in response to a changing environment.
- ☒ D) Specific traits were selected to be passed onto future generations.

9.

The diagram below shows the evolution of some different species of flowers.

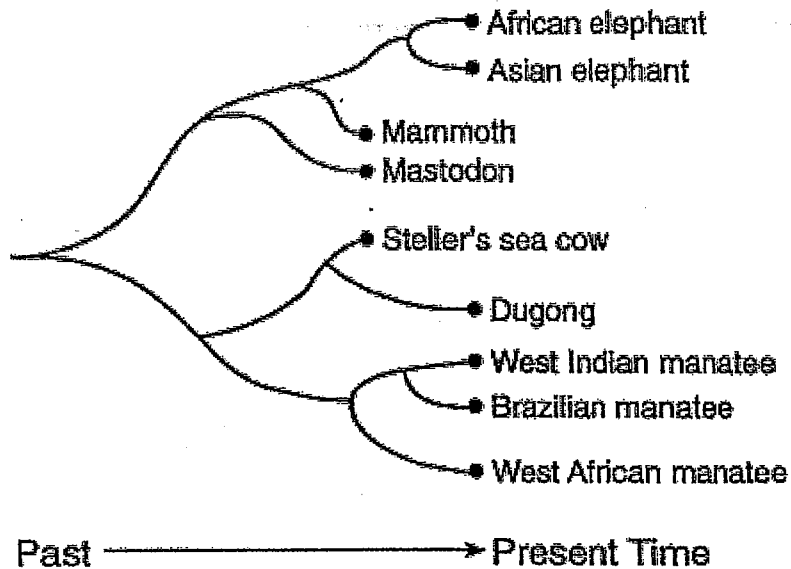


Which statement about the species is correct?

- (1) Species A, B, C, and D came from different ancestors.
  - (2) Species C evolved from species B.
  - (3) Species A, B, and C can interbreed successfully.
  - ☒ (4) Species A became extinct.
10. Many years ago, some chickens could lay about 15 eggs per year. Today, some chickens can lay over 250 eggs per year. Which process **most likely** resulted in the increase in the number of eggs?
- A) learned behavior
  - B) natural selection
  - C) genetic mutation
  - ☒ D) selective breeding
11. Which outcome is **most likely** a result of selective breeding?
- A) the formation of new genes
  - B) an increase in natural selection
  - C) a development of new ecosystems
  - ☒ D) the expression of favored genotypes

12. The passenger pigeon is a bird that has been extinct since the early 1900s. This bird was one of the most abundant birds in the United States. Which factor **most likely** caused the extinction of the passenger pigeon?
- A) a decrease in predators
  - B) an increase in food sources
  - C) the invention of automobiles
  - ☒ D) the destruction of forest habitats
13. Many animals display different fur colors depending on the time of the year. Which statement **best** explains this seasonal fur color change?
- A) It helps the animals find water.
  - B) It helps the animals find shelter.
  - C) It helps the animals learn new behaviors.
  - ☒ D) It helps the animals blend with their environment.
14. Many hummingbirds are attracted to orange flowers. Which statement describes how a plant **most likely** benefits from having orange flowers?
- A) The plant's rate of growth would increase.
  - ☒ B) The plant's chances of successful reproduction would increase.
  - C) The plant's life span would be longer than other plants' life spans.
  - D) The plant's seeds would be more likely to spread to distant locations.
15. Which of the following **best** describes an acquired trait of a cat?
- A) eye color because it is passed on from the previous generation
  - B) fur length because it is passed on from the previous generation
  - C) long tail because it develops during the lifetime of the organism
  - ☒ D) chipped tooth because it develops during the lifetime of the organism
16. A population of beetles has lived in a forest for many generations. Which scenario would **most** rapidly encourage formation of a new species from this beetle population?
- A) a random mutation in one of the beetles
  - B) a small group of beetles finding an area with a new food source
  - C) a non-native predator of the beetle being introduced into the forest
  - ☒ D) a geographic barrier separating the beetle population into two different locations
17. The pitcher plant and venus fly trap plant have leaves that are modified to catch insects. In cacti plants, the leaves are shaped like spines. Leaves on each of these plants are homologous structures. What type of evidence does the presence of homologous structures provide?
- A) Some plants are more closely related to animals
  - B) Plants evolved around the same time.
  - C) Only some plants are capable of photosynthesis.
  - ☒ D) Plants have evolved from a common ancestor.

The relationship of some mammals is indicated in the diagram below.

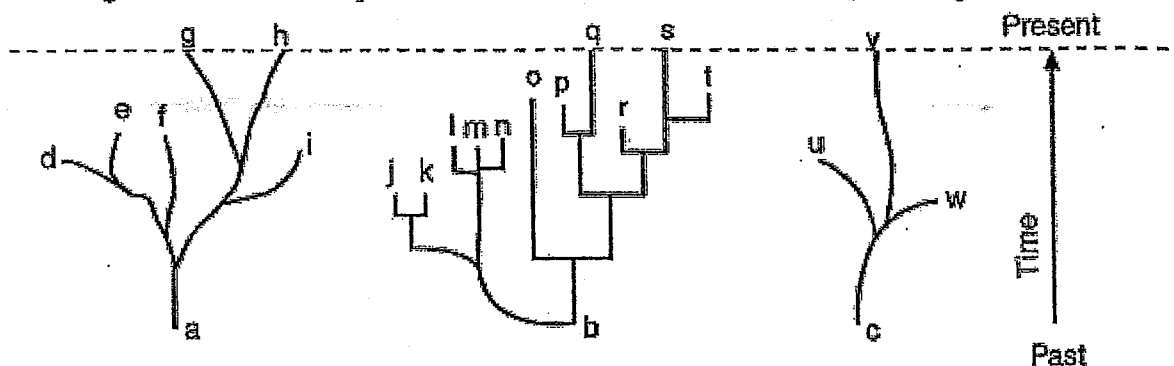


Which statement about the African elephant is correct?

- (1) It is more closely related to the mammoth than it is to the West African manatee.
- (2) It is more closely related to the West Indian manatee than it is to the mastodon.
- (3) It is not related to the Brazilian manatee or the mammoth.
- (4) It is the ancestor of Steller's sea cow.

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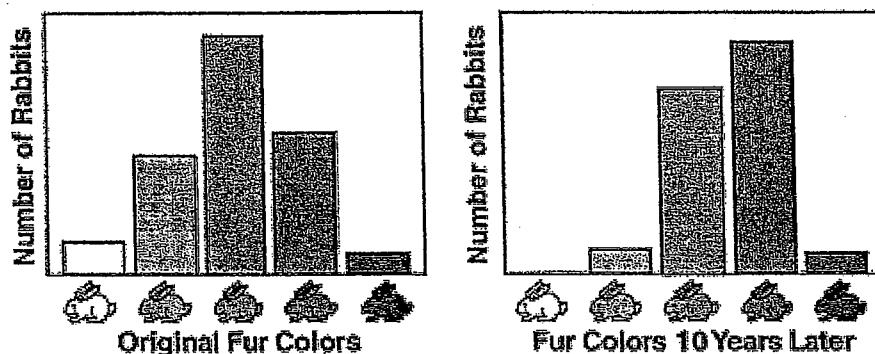
According to some scientists, patterns of evolution can be illustrated by the diagrams below.



Which statement best explains the patterns seen in these diagrams?

- (1) The organisms at the end of each branch can be found in the environment today.
- (2) The organisms that are living today have all evolved at the same rate and have undergone the same kinds of changes.
- (3) Evolution involves changes that give rise to a variety of organisms, some of which continue to change through time while others die out.
- (4) These patterns cannot be used to illustrate the evolution of extinct organisms.

The diagram below illustrates the change that occurred in the physical appearance of a rabbit population over a 10-year period.

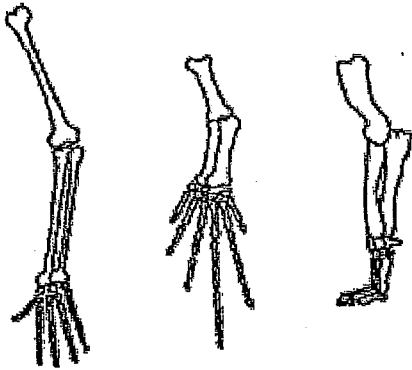


Which condition would explain this change over time?

- (1) a decrease in the mutation rate of the rabbits with black fur
- (2) a decrease in the advantage of having white fur
- (3) an increase in the advantage of having white fur
- (4) an increase in the chromosome number of the rabbits with black fur

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The bones in the forelimbs of three mammals are shown below.



For these mammals, the number, position, and shape of the bones most likely indicates that they may have

- (1) developed in a common environment
- (2) developed from the same earlier species
- (3) identical genetic makeup
- (4) identical methods of obtaining food