Name: _____ Class: _____ Date: _____ ID: A

Biology Chapter 15 Test: Evolution

True/False
Indicate whether the statement is true or false.

____ 1. A vestigial structure in one organism can be defined as a reduced form of a functional structure in another organism.

____ 2. Natural selection is based on the concepts of excess reproduction, variation, inheritance, and the advantages of certain traits.

____ 3. Darwin developed his theory of evolution exclusively from his work on the Galapagos Islands.

____ 4. According to Darwin, the process of natural selection could result in a new kingdom of organisms.

____ 5. Fossils, although interesting, do not actually provide evidence of evolution.

____ 6. Homologous structures indicate a shared ancestry, while vestigial structures do not.

____ 7. Biochemical traits helped Darwin unravel his theory of evolution.

____ 8. Biogeography is the study of why certain species live in certain areas.

____ 9. The Hardy-Weinberg principle describes the conditions within which evolution definitely occurs.

ORIGINAL

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 10. Which answer *best* shows an animal's adaptation to the tropical rain forest?
a. camouflage in a tree frog
b. the long neck of a giraffe
c. an elephant's long trunk
d. migration of birds in winter

____ 11. Which combination of characteristics in a population would provide the *greatest* potential for evolutionary change?
a. small population, few mutations
b. small population, many mutations
c. large population, few mutations
d. large population, many mutations

____ 12. When investigating shell color of a species of snail found only in a remote area seldom visited by humans, scientists discovered the distribution of individuals that is shown in the graph in Figure 15-1. Based on the information shown in the graph, what form of selection is the snail population undergoing?

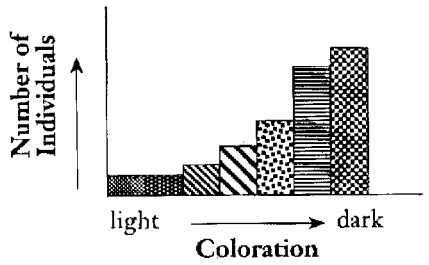

Figure 15-1

a. stabilizing selection
b. disruptive selection
c. artificial selection
d. directional selection

____ 13. What type of adaptation is shown in Figure 15-2?

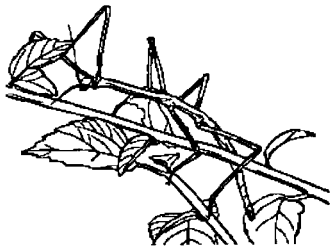

Figure 15-2

a. mimicry
b. camouflage
c. artificial selection
d. homologous structure

____ 14. Which term best describes the structures shown in Figure 15-3?

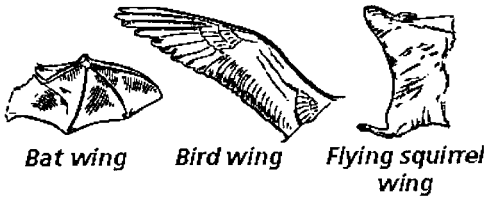

Figure 15-3

a. homologous
b. heterologous
c. analogous
d. vestigial

____ 15. Which of the following is a correct statement about the relationship between natural selection and evolution?
a. Natural selection results from evolution.
b. Natural selection includes evolution as a part of it.
c. Natural selection is one mechanism of evolution.
d. Natural selection and evolution are the same thing.

____ 16. How do fossils demonstrate evidence of evolution?
a. They show that ancient species share similarities with species now on Earth.
b. They show evidence of species that are now extinct.
c. They are the primary source of evidence of natural selection.
d. Fossils reveal that many species have remained unchanged for millions of years.

____ 17. Which of the following is an accurate comparison of derived traits and ancestral traits?
a. Derived traits result from artificial selection; ancestral traits result from natural selection.
b. Derived traits appear in species; ancestral traits appear in genera or higher taxa.
c. Derived traits are primitive; ancestral traits are contemporary.
d. Derived traits are recent features; ancestral traits are more primitive features.

____ 18. Which of the following is the explanation of why bird wings and reptile forelegs are evidence of evolution?
a. Similar functions point to a common ancestor.
b. Analogous structures indicate a common ancestor.
c. Vestigial structures point to a common ancestor.
d. Homologous structures indicate a common ancestor.

____ 19. Superficially similar features molded by natural selection in very different species are classified as what kind of structures?
a. vestigial
b. homologous
c. analogous
d. comparative

____ 20. When allelic frequencies remain unchanged, a population is in genetic equilibrium. This statement expresses which of the following?
a. genetic drift
b. Hardy-Weinberg principle
c. sympatric speciation
d. prezygotic isolating mechanism

____ 21. A population diverges and becomes reproductively isolated. Which of the following is the best description of that phenomenon?
a. speciation
b. bottleneck
c. postzygotic isolation
d. sexual selection

____ 22. What is the term describing the process that occurs when a species evolves into a new species without a physical barrier separating populations?
a. adaptive radiation
b. coevolution
c. sympatric speciation
d. allopatric speciation

____ 23. If a species is suddenly introduced into a new habitat, what might occur?
a. habitat speciation
b. coevolution
c. adaptive radiation
d. selective speciation

____ 24. Which of the following is biochemical evidence for evolution?
a. Embryonic human hemoglobin is different from adult human hemoglobin.
b. Hemoglobin in humans can vary between different individuals.
c. Human hemoglobin is more similar to chimp hemoglobin than mouse hemoglobin.
d. Human hemoglobin is different than mouse hemoglobin.

____ 25. On the islands of Hawaii there are a group of about 30 species of highly variable, but closely related, species of plant called silverswords. These species appear to be related to a small group of plants in North America. What are the silverswords an example of?

a. mimicry
b. analogous structures
c. adaptive radiation
d. vestigial structures