

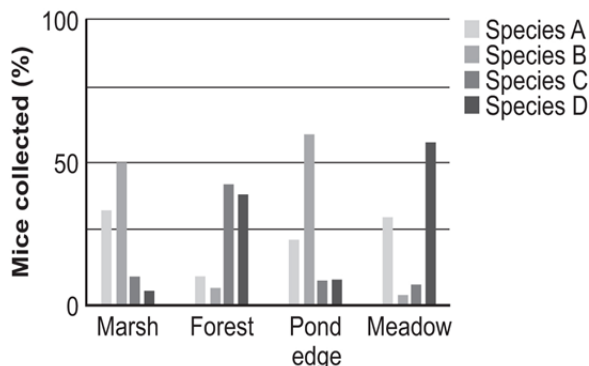
Quiz: Evolution of Populations

Read each question. Circle the letter of the correct answer.

1. What is the term for an observable change in allele frequencies of a population over a few generations?

A. variation
B. genetic drift
C. microevolution
D. intrasexual selection

2. The bar graph shows mouse species collected at different habitats.



Refer to the bar graph. Which mouse species appears to be best adapted to wet environments?

- A. A
B. B
C. C
D. D
3. A small number of birds, blown off course during migration, find an island and colonize it. This population will most likely experience genetic drift as a result of _____.
A. mutations
B. sexual selection
C. the founder effect
D. the bottleneck effect

4. Which statement applies to real populations?

A. Hardy-Weinberg equilibrium is rare.
B. Mutations are rarely passed to offspring.
C. Evolution cannot occur in large populations.
D. Gene flow represses alleles for desirable traits.

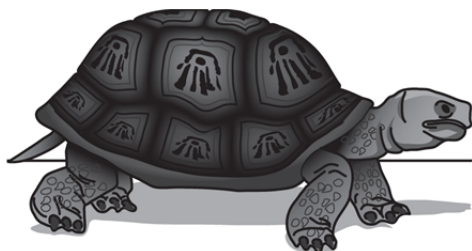
5. Natural selection is the process by which _____.

A. random mutations arise as new organisms develop
B. baseball players pass on the trait for strong arm muscles to children
C. change occurs in the genetic characteristics of individuals that live together in an environment from one generation to another
D. organisms with traits well suited to their environment reproduce at a greater rate than less well adapted organisms in the same environment

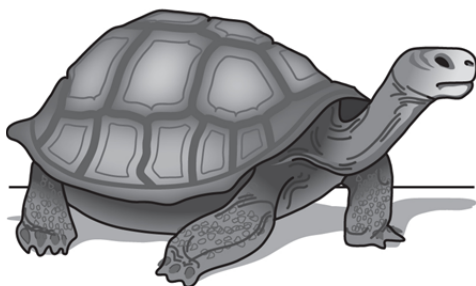
6. In a population of birds, intermediate beak size is selected against, and both very small and very large beak sizes are favored. What type of selection is this an example of?

A. normal
B. disruptive
C. stabilizing
D. directional

7. The illustration shows tortoises from Albemarle and Abingdon Islands.



Albemarle Island



Abingdon Island

Which tortoise has the most advantageous phenotypes for an environment of taller plants?

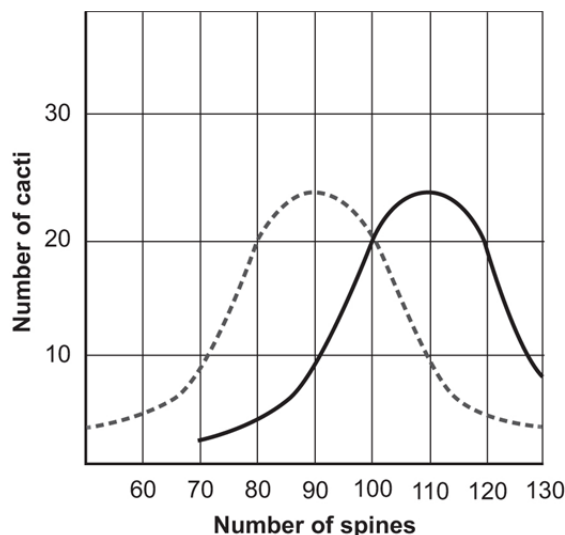
- A. Albemarle Island tortoises because their darker coloration provides shade camouflage
- B. Abingdon Island tortoises because their high shell edges allow their long necks to stretch
- C. Albemarle Island tortoises because their domed shells completely protect their necks and legs
- D. Albemarle Island tortoises because their claws and dry, scaly skin provide protection when competing for mates

- 8. What does being in Hardy-Weinberg equilibrium mean for a population?
 - A. The population is not evolving.
 - B. Equilibrium would gradually end.
 - C. Gene flow would occur, but slowly.
 - D. The population is evolving very rapidly.
- 9. What increases genetic variation when animals move from one population to another population?
 - A. gene flow
 - B. genetic drift
 - C. sexual selection
 - D. bottleneck effect
- 10. The five factors that can lead to evolution are gene flow, genetic drift, mutation, natural selection, and _____.
 - A. emigration
 - B. immigration
 - C. sexual selection
 - D. controlled mating

Read each statement. Write your answer on the lines.

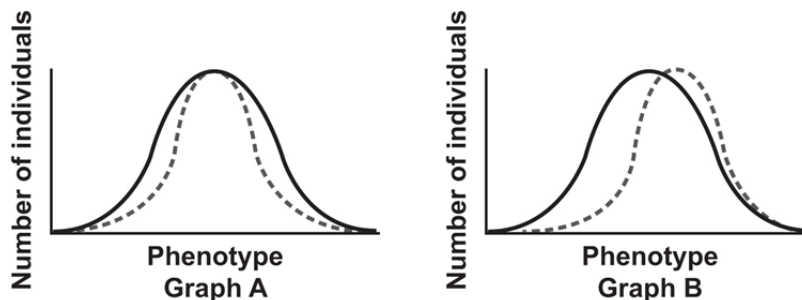
11. Describe how some bacterial populations develop resistance to antibiotics over time.

12. A wild pig population was recently introduced into an area that contained cacti. This has caused a change in the cactus population, as shown in the graph. The dashed curve is the old cactus population, while the solid curve is the new cactus population.



What has caused the shift in the cactus population?

13. Refer to the graphs.



In both graphs the normal distribution is represented by the solid curve. Identify and compare the types of natural selection represented by graphs A and B, and give an example of each.

Directions: Read the passage, then answer the questions that follow.

Finch Beaks

The illustration shows the beaks of several types of finches.



small insect eater

A



cactus eater

B



seed eater

C



bud, leaf and fruit eater

D

14. Populations of these finches live on a group of islands. How would different beak sizes become more common in finches on different islands?

15. In an environment in which insect populations are decreasing, which finch population might also decrease over time, and why would this occur?
