Evolution, Natural Selection Quiz

1. What animal did Darwin use to develop his theory of natural selection?
   a) Whales b) Tortoises c) Marine Iguanas d) Finches

2. Which of the following is predictable using the theory of evolution by natural selection?
   a) Humans develop wings so that they can fly.
   b) Faster gazelles evade cheetahs, resulting in more fast ones being born in generation 2
   c) A spider loses its leg and its offspring all have 7 legs
   d) Crabs will develop lungs in the future to allow them to walk on land.

3. What term is applied to fossils that are perceived to be “stepping stones”, or in-between forms, from an ancestor organism to a more modern organism? (Example: Archaeopteryx fossil is the in-between form from Dinosaurs to Birds)
   a) Ancestor Fossil b) Transitional Form c) Index fossil d) Step Fossil

4. Which of the following is NOT evidence that some organisms have shared ancestry?
   a) DNA b) Homologous structures c) Analogous structures d) None of these

5. Diversity in a species is likely to lead to
   a) extinction b) survival c) static forms d) mutation

6. Antibiotic resistance evolves in populations of bacteria mainly in a hospital setting. Identify the selective pressure that leads to antibiotic resistance and then explain how it develops (2 points).

7. Why don’t individuals evolve, but populations do?
   a) You can’t change the genetics of an individual
   b) The population’s overall characteristics can change over time
   c) Natural selection can cause some individuals to not survive, changing the overall population
   d) All of the above.

8. Which term did Darwin use to describe his ideas about evolution?
   a) descent with modification
   b) evolutionary brinksmanship
   c) developmental complexity
   d) All of the above

9. Which of the following is **not** predicted by evolution?

a) populations will change when the environment changes
b) Some organisms in a population will have an advantage over others, and will have better chances of survival.
c) Some populations will go extinct if they cannot adapt to environmental changes
d) Organisms will become more and more complex over time

10. Which of the following can drive natural selection in a population of organisms?

a) Changes in the environment
b) Selection females choosing mates by their characteristics
c) Humans breeding organisms like fruit trees or dogs to get offspring with better characteristics.
d) all of the above.

11. Underwater, bright colors like red, orange and yellow show up to be dull and help fish actually blend in with the background. A species of fish has 2 forms: a red stripe and no bright stripes. They are hunted by a predator. Which of the following would be predicted in this situation?

a) The red striped fish would have an advantage and more would survive due to camouflage.
b) The non-colored fish might be eaten more by the predator shark, leaving fewer to reproduce.
c) The next generation will have more red striped fish than non-colored fish
d) All of the above.

12. A species of mouse that lives in Canada has both white coloring and brown coloring. They are hunted by a species of predatory bird. Explain why it might be an advantage for the survival of the species to have both colors in the population (2 points).

13. Imagine that the mice from example 12 lost one of the colors (so now they're all white or all brown). Which of the following might be more likely to happen?

a) The entire species would continue as one color and keep growing in number.
b) The species might die out (Extinction) because they aren't camouflaged in some seasons
c) The whole species will evolve to have several different colors so they can survive in multiple seasons
d) The species will evolve into a new species that preys on the birds.

14. What is a vestigial structure? Give 1 example, and tell how it gives evidence of evolution. (4 points)