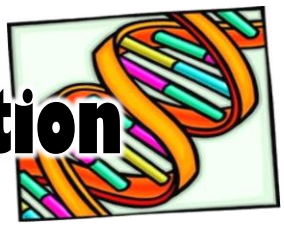
Name: _____ Class: _____ Date: _____

Unit 6 Test: Evolution



Section I: Understanding

1. What is the role of DNA?
   a. It is an indicator of an animal's health.
   b. It is a cell's power plant.
   c. It decides how many offspring an animal should have.
   d. It is a molecular blueprint for a living thing.

2. DNA is made up of…
   a. Kalomine, cytosine, thymine, and lysine.
   b. Kalomine, guanine, cytosine, and thymine.
   c. Adenine, guanine, cytosine, and thymine.
   d. Adenine, guanine, cytosine, and lysine.

3. If two large dragons mated they would...
   a. Probably have a small baby.
   b. Definitely have a small baby.
   c. Probably have a large baby.
   d. Definitely have a large baby.

4. Charles Darwin is important because…
   a. He discovered dominant and recessive genes.
   b. He came up with the Theory of Natural Selection.
   c. He discovered that humans evolved from modern-day gorillas.
   d. He discovered the DNA molecule.

5. Evolution is when…
   a. A species learns to blend in with its environment.
   b. Changes in the DNA of a species occur over generations.
   c. Bigger, stronger animals are better able to survive.
   d. Organisms change habitat.

6. In order for evolution to occur, you need inherited traits, a competing population, and…
   a. Genetic variation.
   b. Millions of years.
   c. A stable environment.
   d. Camouflage.

Multiple Choice Answer Key:
(4 points each)

1. _____
2. _____
3. _____
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7. Which of the following is a modern example of evolution?
    a. The peppered moth adapted to blend in with ash-covered trees.
    b. Alligators evolved to live in fresh water.
    c. Mice evolved natural camouflage.
    d. Hawks evolved different beaks.

8. Which of the following is an evolutionary trade-off?
    a. A skinny deer is quick on its feet and needs less food.
    b. A lion can mate with a tiger, but the offspring will be unable to have children.
    c. A bright red cardinal can find a mate easily, but is quickly spotted by predators.

9. What was the result of our Hawks & Field Mice Lab in the auditorium?
    a. The predators learned to find the prey.
    b. The predators were the most fit to survive.
    c. The mice evolved.
    d. The mice went extinct.

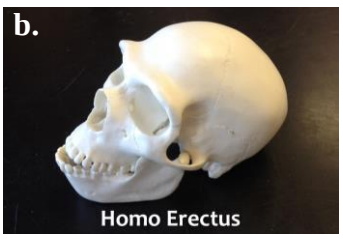
10. What is agar?
    a. A type of laboratory equipment.
    b. A nutrient-filled gel used to grow microorganisms.
    c. A liquid substrate that contains plant DNA.
    d. None of the above.

Section II: Applying

11. The Theory of Evolution basically says…
    a. Organisms evolve to fit their environment.
    b. All life evolved from a common ancestor.
    c. Survival of the fittest.
    d. All of the above.

12. How have bacteria evolved over the past 100 or so years?
    a. They have evolved new flagella.
    b. They have evolved to reproduce more quickly.
    c. They have evolved to resist human drugs.
    d. Trick question: 100 years isn't long enough to evolve!

13. Which of the following skulls appears to be most closely related to humans?

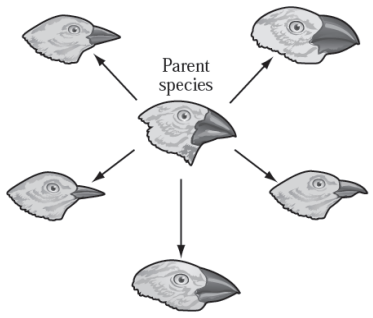


14. Why do humans seem to prefer the tastes of certain plants (for example, cinnamon bark) over others (for example, oak bark)?
    a. Because cinnamon trees evolved to fit their new environment.
    b. Because cinnamon trees evolved more quickly than oak trees did.
    c. We evolved to like cinnamon because it kills germs.
    d. We evolved to like cinnamon because it has lots of vitamins.

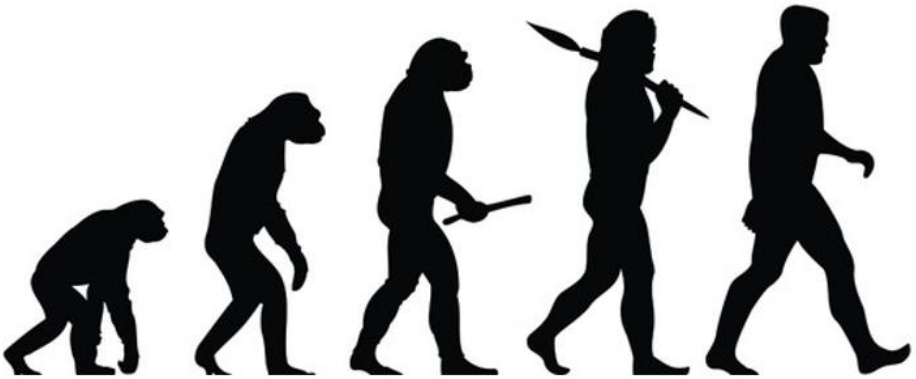
15. Which of the following would <u>not</u> lead to evolution?
    a. Smaller lions having an advantage during a food shortage.
    b. A genetic mutation that allowed ants to blend in with the ground.
    c. A caveman learning how to build a spear.
    d. A dolphin giving birth to babies with large fins, for faster swimming.

16. The diagram below shows the beaks of five species of birds that developed over time from one parent species. The five species of birds can be found living in the same area. Which of the following <u>best</u> explains why the beak shape of each species evolved differently?

    a. The beaks are just random genetic mutations.
    b. Each beak shape is an adaptation to a specific source of food.
    c. Each beak shape is designed to construct a different nest.
    d. Each beak shape was created to protect the birds from a different predator.



17. Below is a famous drawing called the "March of Progress." Upon viewing the picture, a good scientist's response would be…



    a. "That picture shows how humans evolved from chimpanzees."
    b. "That picture is out of order."
    c. "That picture is way off."

18. How would you expect a large, aggressive species to evolve if they were forced to live together on a small, cramped island with little food?
    a. They would become larger and more dominant.
    b. They would become smaller and friendlier.
    c. They would lose their wings, but become smarter.

19. Which screenshot below <u>was not</u> part of your HW assignments from April 4th and April 11th?
(In other words, prove to me that you did both homeworks!)

20. Which of the following common statements about evolution is <u>true</u>?
    a. Evolution is "just a theory."
    b. Evolution explains how humans evolved from gorillas.
    c. Evolution is incompatible with religion.
    d. Evolution is not science because it's not observable or testable.
    e. Evolution involves organisms trying to adapt.
    f. Evolution happens during an animal's lifespan.
    g. Evolution explains how life began on Earth.
    h. None of the above.

Section III: The Real World

(5 points each)

21. Imagine you are an evolutionary biologist working for a drug company. Your boss asks you to plan an experiment to test a drug called *zibloxyn*, a new antibiotic that is supposed to cure strep throat. What are some materials you would need to do the experiment? Make a list below.

22. Design a lab procedure that would allow you test the effectiveness of the drug *zibloxyn*.

23. One common misconception is that, *"Evolution is just a theory, not a fact."* Explain what your response would be if you heard someone say this, and you needed to argue the case for evolution. Make sure you (a) explain what evolution is, (b) explain how it works, and (c) provide two examples.

Read the article below from the *World Wildlife Federation*, then answer the open response question.

"Every minute, about three elephants are murdered for their tusks. Poachers will kill them illegally and then sell their tusks, which are made of valuable ivory. Unfortunately, the elephants with the biggest, longest, most beautiful tusks are usually the ones killed first. And each single tusk is worth about $700.

This illegal trade was largely responsible for reducing the African elephant population from 3-5 million to only 700,000 today. In the 1980s, for example, an estimated 100,000 elephants were being killed per year. The poaching was difficult to control because of the availability of guns. Interestingly, the poaching has actually led to some changes in the genetics of the elephant population. The elephants are evolving to…"

24. Explain how the poaching of elephants is forcing the African Elephant to evolve.

**Hint: It should help the elephants, at least eventually!*