

## **The Theory Of Evolution By Natural Selection** (p. 276 – 282)

### **I. Darwin Proposed A Mechanism For Evolution**

1. \_\_\_\_\_ is the process by which modern organisms descended from ancient organisms. (Not in the book.)
2. In 1859, who published an explanation for a mechanism driving the process of evolution?  
\_\_\_\_\_

3. In Darwin's time, most people believed that a species is divinely created and unchanging.

Circle One :            True            False

4. Explain the hypothesis of evolution created by Jean Baptiste de Lamarck.  
\_\_\_\_\_  
\_\_\_\_\_

5. Circle the letter of the sentence that is **false** about Darwin's voyage on the HMS *Beagle*.

- a. Darwin made important observations on the Galapagos Islands, near South America.
- b. He reported his findings soon after he returned home.
- c. Darwin read Charles Lyell's book, *Principles Of Geology*.
- d. Discovered fossils of extinct animals.

6. How did the economist, Thomas Malthus, influence Darwin?  
\_\_\_\_\_  
\_\_\_\_\_

7. Define the term population.

Population –

### **II. Evolution By Natural Selection**

1. Define the term natural selection.

Natural Selection –

2. Define the term adaptation.

Adaptation –

3. List three **critical** adaptations that you possess as a human.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4. *On The Origin Of Species*, presented a view of evolution that was widely accepted.

Circle One :            True            False

5. List the four components of Darwin's theory of evolution by natural selection.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**III. Darwin's Ideas Updated** (*Questions 2 – 5 are not in the book.*)

1. How does natural selection affect allele frequencies in populations?

\_\_\_\_\_

2. *What does the Hardy-Weinberg principle state?*

\_\_\_\_\_

\_\_\_\_\_

3. \_\_\_\_\_ *occurs when allele frequencies are constant.*

4. *List five conditions required to maintain genetic equilibrium.*

- |          |          |
|----------|----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |
| 5. _____ |          |

5. *Why is a large population size important for maintaining genetic equilibrium?*

\_\_\_\_\_

6. Define the term reproductive isolation.

Reproductive Isolation –

7. How has reproductive isolation affected squirrel populations near the Grand Canyon?

\_\_\_\_\_

\_\_\_\_\_

8. Differentiate between gradualism and punctuated equilibrium.

Gradualism : \_\_\_\_\_

Punctuated Equilibrium : \_\_\_\_\_

\_\_\_\_\_