Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Multiple Choice – circle the correct response

1. Which one is a condition required in the Hardy Weinberg Equilibrium?

a. natural selection

b. mutation

c. genetic drift

d. random mating

2. Allele frequency refers to:

a. the rate at which an allele becomes common in a population.

b. the number of times a genotype occurs in a gene pool.

c. the number of times an allele occurs in a gene pool.

d. the number of alleles possible for a single trait.

3. A gene pool is:

a. the total number of alleles in a population.

b. all alleles possible for a single trait.

c. the total number of genes and alleles in a species.

d. the total number of genes and alleles in a population.

4. Which type of selection may be responsible for the graph below?

1000

Number of  
Individuals

0

0lbs. 0.5lbs 1lb. 1.5lbs. 2lbs. 2.5lbs.

Size of Individuals

a. directional selection

b. disruptive selection

c. stabilizing selection

d. genetic equilibrium

5. Evolution may be occurring if which of the following is happening?

a. genetic drift

b. random mating

c. gene pooling

d. no mutations

6. Evolution is:

a. a gradual goal-oriented process

b. a process of change in an individual through adaptation to its environment

c. any change in the relative frequency of alleles in a population

d. the passing of traits from parents to offspring

Circle the correct response

7. True/False Darwin made assumptions about heritable variation, the age of the Earth, and relationships among organisms, including proposing natural selection as the mechanism for evolution.

8. True/False Natural selection acts on genotypes, but changes phenotypes.

9. True/False Polygenic traits typically can produce more variation of phenotypes than single- gene traits can.

Until recently, natural selection has been acting on human birth weight. Without medical care very low birth weight and very high birth weight babies could not survive.

10. True/False This is an example of directional selection.

11. True/False Genetic drift is more likely and more common in large populations than in small populations because large populations have more individuals and more genes to affect a regions gene pool.

Short Answer – Briefly provide your response in full sentences.

12. Define natural selection.

13. List and describe 3 of the isolating mechanisms that played a role in the speciation of the Galapagos finches.

14. Mutations and Gene shuffling are two processes that can lead to inherited variation. Briefly describe each and give an example of each (Describe a situation where this occurred).

15. How could a single mutation in the gene of one individual effect an ecosystem over time?