Name:

Chapter 11: Introduction to Genetics Exam

**Matching: Match the definitions of a word with the proper term. Some of the terms may not be used at all.**

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| --- | --- | --- | --- |
| A. Homozygous | B. Fertilization | C. Genetics | D. Hybrid |
| E. Genotype | AB. Heterozygous | AC. Phenotype | AE. Segregation |

1. The observable physical and physiological traits of an organism, which are determined by its genetic makeup.

2. The scientific study of heredity and hereditary variation.

3. Having two different alleles for a given gene.

4. The genetic makeup, or set of alleles, of an organism.

5. Having two identical alleles for a given gene.

**Multiple Choice: For each question, select the answer that best completes the question.**

6. Mendels law of states that some alleles are dominant over other alleles.

A. independent assortment

B. dominance

C. segregation

D. recession

7. If an offspring is said to be homozygous recessive, which of the following could be its genotype?

A.Tt

B. RrSs

C. TTss

D. ss

8. Assume that in mice, B = black fur, b = brown fur. If a heterozygous black mouse mates with a homozygous brown mouse, what percent of their offspring will have black fur?

A. 25%

B.50%

C. 75%

D. 100%

9. Which of the following would have a different phenotype from the others?

A. rR

B. rr

C. RR

D. Rr

**Fill in the blank:**

10. The principle of states that genes for different traits can segregate during the formation of gametes. helps account for the many genetic variations observed in plants, animals, and other organisms.

11. Many genes have more than two alleles and are therefore said to have . This does not mean that an individual can have more than two alleles. It only means that more than two possible alleles exist in a population.

12. Many traits are produced by the interaction of several genes. Traits controlled by two or more genes are said to be , which means “having many genes.”

**Short Answer: Read the following short answer questions completely before answering the questions. To receive full credit all parts of the question must be addressed in your answer!**

13. What is segregation? Provide an example of this as well.

14. In humans, brown eyes (B) are dominant over blue (b)\*. A brown-eyed man marries a blue-eyed woman and they have three children, two of whom are brown-eyed and one of whom is blue-eyed. Draw the Punnett square that illustrates this marriage. What is the man’s genotype? What are the genotypes of the children?

15. In class we went over Mendel’s Principles, with the space provided rewrite those principles below. Use the back of this page if you run out of room.