Chapter Test

Name: -------------------------------------  Class: -------

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. What step did Mendel take to be sure that his pea plants cross-pollinated?
   a. He used two white plants.
   b. He removed the anthers of one plant.
   c. He added anthers to both plants.
   d. He used plants that were not true breeding.

2. What happens when a true-breeding plant self-pollinates?
   a. One of its offspring has the same traits as the parent.
   b. Some of its offspring have the same traits as the parent.
   c. All of its offspring have the same traits as the parent.
   d. None of its offspring have the same traits as the parent.

3. Why were ratios important in Mendel’s work?
   a. They showed that heredity does not follow a set pattern.
   b. They showed that some traits are never passed on.
   c. They showed the relationship between two different things.
   d. They showed that some recessive traits are really dominant.

4. A plant with two dominant OR two recessive alleles is said to be
   a. heterozygous.
   b. cross-pollinating.
   c. homozygous.
   d. true breeding.

5. Asexual reproduction relates to humans in that
   a. none of our body cells reproduce this way.
   b. many body cells reproduce this way.
   c. the parent cells do not divide.
   d. meiosis occurs.

6. How are sex cells different from other human cells?
   a. Sex cells have more chromosomes.
   b. Sex cells have half as many chromosomes.
   c. Sex cells are larger.
   d. Sex cells have no chromosomes.

7. The one thing that Gregor Mendel realized could explain the results of his experiments was that
   a. the traits were appearing at random.
   b. the male traits were always the dominant ones.
   c. each trait had two sets of instructions, one from each parent.
   d. his important research would open the door to modern genetics.
8. The different forms of a gene that decide a characteristic are known as
   a. alleles.                   c. albinism.
   b. phenotypes.              d. genes.

9. What did Mendel discover about recessive traits?
   a. Recessive traits reappear in the second generation.
   b. Recessive traits disappear altogether.
   c. Recessive traits never appear in the second generation.
   d. Recessive traits become dominant.

10. What are chromosomes that carry the same sets of genes?
    a. twin chromosomes       c. ordinary chromosomes
    b. homologous chromosomes d. asexual chromosomes

11. What is a trait?
    a. different forms of meiosis       c. different forms of chromatids
    b. different forms of a pedigree    d. different forms of a characteristic

12. When a plant fertilizes itself, it is called a(n)
    a. allele plant.                  c. self-pollinating plant.
    b. true-breeding plant.           d. cross-pollinating plant.

13. When there is incomplete dominance,
    a. one allele has more influence than the others.
    b. each allele has its own degree of influence.
    c. the alleles have no influence.
    d. there are no alleles present.

14. What do you call one set of instructions for an inherited trait?
    a. alleles                   c. albinism
    b. phenotype                 d. genes

15. Two forms of a gene, one from each parent, are called
    a. alleles.                   c. albinism.
    b. phenotypes.               d. genes.

16. Offspring that are different from both parents are produced by
    a. asexual reproduction.      c. sexual reproduction.
    b. something going wrong.     d. mitosis.

17. What is heredity?
    a. traits passing from offspring to parents
    b. traits passing from parents to offspring
    c. plants that are cross-pollinated
    d. the ratio of dominant to recessive traits

18. What is Mendel’s ratio for dominant to recessive traits?
    a. 1 to 1                     c. 3 to 1
    b. 2 to 1                     d. 4 to 1
19. What is a phenotype?
   a. the way an organism feels  
   b. a group of 5 alleles  
   c. a dominant gene  
   d. the way an organism looks

Completion

Complete each statement.

*Use the terms from the following list to complete the sentences below.*
- heredity
- dominant traits
- genotype
- phenotype
- probability

20. The passing of traits from parents to offspring is called _______________________.

21. An organism’s appearance is its _______________________.

22. If each parent has the same recessive trait, the ______________________ of the offspring having the trait goes up.

23. To trace a trait through generations of a family, you can use a (n) _______________________.

Short Answer

24. What is incomplete dominance?

25. List three of the characteristics that Mendel studied in pea plants.

26. How would the importance of Mendel’s experiments have been different if he had never done the second experiments?
Matching

Match each item with the correct statement below.

- a. phenotype
- b. Punnett square
- c. homozygous
- d. heterozygous
- e. cross-pollination
- f. probability
- g. genotype

27. Formed from both inherited alleles
28. Occurs when a plant pollinates a different kind of plant
29. Used to organize possible offspring combinations
30. The mathematical chance that something will happen
31. An organism’s appearance
32. A plant with either two dominant or two recessive genes

With My Best Wishes
MULTIPLE CHOICE

1. ANS: B
   PTS: 1
   DIF: 1
   REF: 1
   OBJ: 2

2. ANS: C
   PTS: 1
   DIF: 1
   REF: 1
   OBJ: 1

3. ANS: C
   PTS: 1
   DIF: 1
   REF: 1
   OBJ: 2

4. ANS: C
   PTS: 1
   DIF: 1
   REF: 2
   OBJ: 1

5. ANS: B
   PTS: 1
   DIF: 1
   REF: 3
   OBJ: 1

6. ANS: B
   PTS: 1
   DIF: 1
   REF: 3
   OBJ: 2

7. ANS: C
   PTS: 1
   DIF: 1
   REF: 1
   OBJ: 2

8. ANS: A
   PTS: 1
   DIF: 1
   OBJ: 1
   REF: 2

9. ANS: A
   PTS: 1
   DIF: 1
   OBJ: 3
   REF: 1

10. ANS: B
    PTS: 1
   DIF: 1
   OBJ: 1
   REF: 3

11. ANS: D
    PTS: 1
   DIF: 1
   OBJ: 3
   REF: 1

12. ANS: C
    PTS: 1
   DIF: 1
   OBJ: 2
   REF: 1

13. ANS: B
    PTS: 1
   DIF: 1
   OBJ: 1
   REF: 2

14. ANS: D
    PTS: 1
   DIF: 1
   OBJ: 1
   REF: 2

15. ANS: A
    PTS: 1
   DIF: 1
   OBJ: 1
   REF: 2

16. ANS: C
    PTS: 1
   DIF: 1
   OBJ: 2
   REF: 3

17. ANS: B
    PTS: 1
   DIF: 1
   OBJ: 1
   REF: 1

18. ANS: C
    PTS: 1
   DIF: 1
   OBJ: 2
   REF: 2

19. ANS: D
    PTS: 1
   DIF: 1
   OBJ: 1
   REF: 2
SHORT ANSWER

24. ANS: when each allele has its own degree of influence
   PTS: 1 DIF: 1 REF: 2 OBJ: 3

25. ANS: seed shapes, plant height, and flower color
   PTS: 1 DIF: 1 REF: 1 OBJ: 2

26. ANS: His work would have been much less important because he would not have discovered the role of recessive traits or the recurring ratio with which recessive traits appear.
   PTS: 1 DIF: 2 REF: 1 OBJ: 2