Bio12-Q2W1-Qs.Bank

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

____ 1. A pea is heterozygous for a given trait. Which of the following is NOT true?
a. The pea has the dominant phenotype.
b. The pea cannot resemble both parents.
c. The pea has two different alleles.
d. The pea resembles at least one parent for this trait.

____ 2. In mink, brown fur color is dominant to silver-blue fur color. If a homozygous brown mink is mated with a silver-blue mink and 8 offspring are produced, how many would be expected to be silver-blue?
a. 8
b. 6
c. 0
d. 3

____ 3. A couple has two children, both of whom are boys. What is the chance that the parents' next child will be a boy?
a. 50%
b. 0%
c. 25%
d. 75%

____ 4. Which of the following describes an organism that has the genotype Bb?
a. homozygous
b. heterozygous
c. inbreed
d. all of these

____ 5. A useful device for predicting the possible offspring of crosses between different genotypes is the _____.
a. law of independent assortment
b. law of dominance
c. testcross
d. Punnett square

____ 6. The statement: "In meiosis, the way in which a chromosome pair separates does not affect the way other pairs separate," is another way of expressing Mendel's law of _____.
a. first filial generations
b. independent assortment
c. Punnett squares
d. dominance

____ 7. The numbers in Figure 10-1 represent the chromosome number found in each of the dog cells shown. The processes that are occurring at A and B are _____.

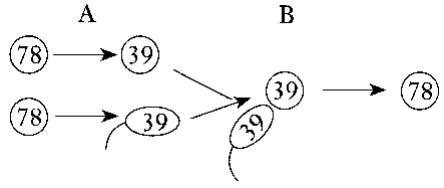

Figure 10-1

a. mitosis and pollination
b. meiosis and pollination
c. meiosis and fertilization
d. mitosis and fertilization

____ 8. A white mouse whose parents are both white produces only brown offspring when mated with a brown mouse. The white mouse is most probably _____.
a. haploid
b. homozygous dominant
c. heterozygous
d. homozygous recessive

____ 9. Crossing over results in a _____.
a. female genotype
b. male genotype
c. genetic recombination
d. phenotype replication

____ 10. During which stage of cell division does the number of chromosomes decrease from diploid (2*n*) to haploid (*n*)?
a. Mitosis
b. Meiosis II
c. Meiosis I
d. Prophase I

____ 11. During which phase of meiosis do homologous chromosomes align as tetrads in the middle of the spindle?
a. Prophase II
b. Metaphase II
c. Prophase I
d. Metaphase I

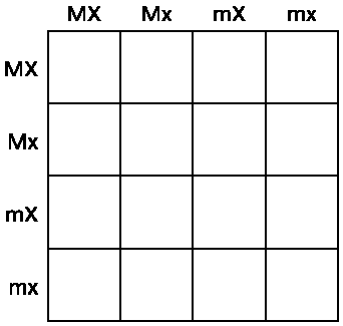

Figure 10-7

____ 12. What fraction of this cross will be recessive for both traits?
a. 1/2
b. 1/16
c. 1/4
d. 1/8

____ 13. A female guinea pig homozygous dominant for black fur color is mated with a male homozygous for white fur color. In a litter of eight offspring, there would probably be _____.
a. 8 black guinea pigs
b. 8 white guinea pigs
c. 2 black, 4 gray, and 2 white guinea pigs
d. 4 black and 4 white guinea pigs

____ 14. Cells containing two alleles for each trait are described as _____.
a. homozygous
b. gametes
c. diploid
d. haploid

____ 15. A dog's phenotype can be determined by _____.
a. looking at the dog's parents
b. examining the dog's chromosomes
c. looking at the dog
d. mating the dog and examining its offspring

____ 16. Pollination can best be described as _____.
a. the formation of male and female sex cells
b. the fusing of the egg nucleus with the pollen nucleus
c. the transfer of the male pollen grain to the female organ
d. the type of cell division that produces diploid gametes

____ 17. Pairs of chromosomes having genes for the same traits are said to be —
a. homologous.
b. homozygous.
c. analogous.
d. None of the above

____ 18. The gamete that contains genes contributed only by the mother is _____.
a. an egg
b. the sperm
c. dominant
d. a zygote

____ 19. After performing a monohybrid cross, it is important to analyze the results with a Punnett square. Each box of a Punnett square represents —
a. a possible phenotype.
b. one individual.
c. a possible genotype.
d. two possible genotypes.

____ 20. Nondisjunction can result in the formation of a zygote with three copies of a chromosome. What is this condition called?
a. Trisomy
b. Turner's syndrome
c. Triploidy
d. None of the above

____ 21. In chickens, rose comb (R) is dominant to single comb (r). A homozygous rose-combed rooster is mated with a single-combed hen. All of the chicks in the F_1 generation were kept together as a group for several years. They were allowed to mate only within their own group. What is the expected phenotype of the F_2 chicks?
a. 100% rose comb
b. 75% rose comb and 25% single comb
c. 100% single comb
d. 50% rose comb and 50% single comb

____ 22. Mendel's law of segregation states that during meiosis, the factors that control each trait separate, and only _____ from each pair is/are passed to the offspring.
a. one factor
b. the recessive trait
c. two factors
d. the dominant trait

____ 23. You perform a monohybrid cross between two true-breeding strains of organisms with genotypes *AA* and *aa*. What do you expect the ratio of genotypes to be in the F1 generation?
a. 2:2
b. 1:2:1
c. 3:1
d. 9:3:3:1

____ 24. The law of independent assortment states that the inheritance of alleles for one trait is not affected by the inheritance of alleles for a different trait if the genes for the traits are on _____.
a. homologous chromosomes
b. the same chromosome
c. separate chromosomes
d. homozygous chromosomes

____ 25. The tall allele, *T*, is dominant to the short allele, *t*, in Mendel's pea plants. You examine a pea plant which exhibits a phenotype of tallness. What is its genotype?
a. *Tt*
b. *TT*
c. *tt*
d. It cannot be determined from the information given.

==========