

Unit 5 Quiz

True False Questions

Indicate True or False for the following Statements.

1. The allele combinations in the Punnett square boxes show the possible genotypes. (True/False)
2. Tall plants (T) are dominant over short plants (t). In a cross between dominant and recessive homozygous parents (TT x tt), 25% of the offspring should be homozygous recessive. (True/False)
3. Use the following information: Purple color (P) is dominant over white color (p) and Tall plants (T) are dominant over short plants (t). In a cross between two parents that are both heterozygous for both traits, 1/16 of the offspring should have the recessive phenotype for both traits. (True/False)
4. $I^A I^B$ people have type AB blood because the A and B alleles are codominant. (True/False)
5. The red, pink, or white flowers in snapdragons are an example of complete dominance. (True/False)
6. Characteristics controlled by more than one gene, each of which may have two or more alleles, is known as codominance. (True/False)
7. When only one of two alleles is expressed, the expressed allele is the dominant allele, and the allele that isn't expressed is the recessive allele. (True/False)

Short Answer Questions

Fill in the answer blanks with correct answer.

8. A _____ allows you to determine the expected percents of different genotypes in the offspring of two parents with known genotypes.
Answer:
9. Long fur (F) is dominant to short fur (f). If a cross results in half long fur and half short fur offspring, the parental genotypes are Ff x ff. Enter **True** or **False**.
Answer:
10. Use the following information: Purple color (P) is dominant over white color (p) and Tall plants (T) are dominant over short plants (t). If two parents are _____, the probability of their child being homozygous recessive is 25%.
Answer:

Multiple Choice Questions

For each question, four alternative choices are given, of which only one is correct. You have to select the correct alternative and mark it in the appropriate option.

11. Characteristics inherited from parents are called _____.
 - a. Traits
 - b. Functions
 - c. Factors
 - d. None of the above
12. An allele that produces its characteristic phenotype only when its paired allele is identical is known as a _____.
 - a. Recessive allele
 - b. Dominant allele
 - c. Gene
 - d. None of the above

13. A man with type O blood marries a woman heterozygous for type B blood. What is the probability of blood type in their offspring?
- 50% type B and 50% type O
 - 100% type B
 - 100% type O
 - None of the above
14. Pink colored flowers are obtained from a cross between a red flowered snapdragon and a white flowered snapdragon. The appearance of the pink colored flower is known as:
- Codominance
 - Complete dominance
 - Incomplete dominance
 - None of the above
15. The inheritance of ABO blood groups illustrates:
- Polyploidy
 - Mendelian inheritance
 - Multiple allelism
 - None of the above
16. The inheritance of skin color in a man is an example of _____.
- Cumulative genes
 - Codominance
 - Pleiotropism
 - All of the above
17. Phenotypic ratios of 1:2:1 in the offsprings explain the principle of _____.
- Incomplete dominance
 - Dominance
 - Recessiveness
 - None of the above
18. If two alleles are codominant,
- both will express themselves in a blended phenotype
 - only one of the two will express themselves by random selection
 - only one of the two will express themselves based on chromosome placement
 - both will express themselves in a mixed phenotype
19. Nondisjunction occurs during
- meiosis
 - mitosis
 - DNA replication
 - all of the above
20. Red-green color blindness is a recessive sex-linked trait. If a father is colorblind and the mother is a normal homozygous individual, which of the following will accurately describe his offspring?
- 50% of the females would be carriers; 100% of the males would be affected
 - 100% of the females would be carriers; 100% of the males would be normal
 - 50% of the females would be affected; 50% of the males would be affected
 - 100% of the females would be normal; 50% of the males would be affected

21. Phenotype is an organism's actual observed properties such as:
 - a. Morphology (physical characteristics)
 - b. Development
 - c. Behavior
 - d. All of the above
22. An organism that inherits two alleles of the same type is known as
 - a. Genotype
 - b. Phenotype
 - c. Homozygous
 - d. Heterozygous
23. Which best describes an allele?
 - a. a section of a gene
 - b. a variation of a given gene
 - c. a physical trait
 - d. all of the above
24. X chromosome carry genes which are always expressed in _____.
 - a. Sub-lethal
 - b. Lethal
 - c. Expressed in males
 - d. Expressed in females
25. If a hemophilic father is crossed with a non-carrier, normal mother, what is the probability that their male child is also hemophilic?
 - a. 0.25
 - b. 0
 - c. 1
 - d. 0.5
26. A heterozygous purple flower is crossed with a recessive white flower. The progeny will have 50% purple 50% _____.
 - a. White
 - b. Black
 - c. Purple
 - d. None of the above
27. If individuals of genotype AaBbCc are crossed, how many different types of genotypes are formed in the gametes?
 - a. 8
 - b. 6
 - c. 4
 - d. 5
28. What process creates gametes?
 - a. Genotyping
 - b. Fertilization
 - c. Mitosis
 - d. Meiosis

29. If a parent has Tt alleles, what is the probability that its gametes will contain a T?
- a. 75%
 - b. 25%
 - c. 50%
 - d. 0