Quiz: Genetic Alterations

Part I: Fill in the Blank: Directions: Use the words from the word bank to complete each sentence. Each word may be used only once.

Word Bank

mutation	DNA	insertion	deletion	substitution
chromosome	inherited	proteins	beneficial	harmful

1. A change in the genetic material of an organism is called a _____.
2. Genetic information is stored in _____.
3. A(n) _____ mutation occurs when a nucleotide is added to a DNA sequence.
4. A(n) _____ mutation occurs when a nucleotide is removed from a DNA sequence.
5. A(n) _____ mutation occurs when one nucleotide is replaced by another.
6. Mutations can affect the production of _____ in cells.
7. Some genetic alterations can be _____ and improve an organism's chance of survival.
8. Other genetic alterations can be _____ and cause disorders or diseases.
9. Some mutations are _____ and can be passed from parents to offspring.
10. DNA is organized into structures called _____.

Part II: Multiple Choice: Directions: Circle the best answer.

11. What is a genetic alteration?
    a. A type of cell division
    b. A change in genetic material
    c. A protein made by cells
    d. A chromosome
12. Which of the following is a type of genetic alteration?
    a. Insertion
    b. Deletion
    c. Substitution
    d. All of the above
13. Which mutation involves adding nucleotides to a DNA sequence?
    a. Deletion
    b. Substitution
    c. Insertion
    d. Replication

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14. Which mutation removes nucleotides from DNA?
    a. Insertion
    b. Deletion
    c. Substitution
    d. Duplication

15. What can cause genetic alterations?
    a. Radiation
    b. Certain chemicals
    c. Errors during DNA replication
    d. All of the above

16. Which of the following may result from a harmful mutation?
    a. Genetic disorder
    b. Increased adaptation
    c. Improved survival
    d. No change

17. What molecule contains genetic information?
    a. Protein
    b. Lipid
    c. DNA
    d. Carbohydrate

18. Genetic alterations can affect:
    a. Traits
    b. Protein production
    c. Cell function
    d. All of the above

19. Which statement is true about beneficial mutations?
    a. They always cause disease.
    b. They may improve survival in an environment.
    c. They remove chromosomes.
    d. They destroy DNA.

20. If a mutation is passed from parent to offspring, it is called:
    a. Acquired
    b. Beneficial
    c. Inherited
    d. Neutral

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