

# 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

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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