

**Quiz: Mutations and Genetic Diversity**

Read each question. Circle the letter of the correct answer.

1. Generally, mutations that affect a single gene occur during \_\_\_\_\_.
  - A. operation
  - B. translation
  - C. replication
  - D. transcription
2. Which type of mutation has no effect on phenotype?
  - A. point
  - B. silent
  - C. frameshift
  - D. chromosomal
3. A mutation caused by a piece of DNA breaking away from its chromosome and becoming attached to a nonhomologous chromosome is called \_\_\_\_\_.
  - A. deletion
  - B. inversion
  - C. duplication
  - D. translocation
4. Nondisjunction causes which of the following?
  - A. extra gene
  - B. extra codon
  - C. extra chromosome
  - D. extra nitrogen base
5. Genetic variation can arise from a random change in the DNA of a gene. This change is called a(n) \_\_\_\_\_.
  - A. allele
  - B. mutation
  - C. gene flow
  - D. gene pool
6. Cystic fibrosis is an example of a genetic disease caused by the deletion of a nucleotide. What is the term for this type of mutation?
  - A. frameshift
  - B. single-gene
  - C. translocation
  - D. chromosomal
7. Mutations that can affect the offspring of an organism occur in what cell type?
  - A. body
  - B. germ
  - C. brain
  - D. blood
8. Which of these is an example of a mutagen?
  - A. thymine
  - B. triglyceride
  - C. UV sunlight
  - D. repair enzyme

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Unit 7 Lesson 4**

**Lesson Quiz**

9. If nondisjunction occurs, \_\_\_\_\_.
- A. mitosis cannot take place
  - B. no gametes will be produced
  - C. there will be too many gametes produced
  - D. a gamete will receive too many or too few copies of a chromosome

10. People with Down syndrome have \_\_\_\_\_.
- A. 45 chromosomes
  - B. 46 chromosomes
  - C. 47 chromosomes
  - D. no X chromosomes

**Read each statement. Write your answer on the lines.**

11. What is a frameshift mutation?

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12. Explain how environmental factors can affect genetic diversity, and give one example of how this occurs.

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13. What kind of mutation results from the substitution of one nitrogen base for another? Enter your answer in the space provided.

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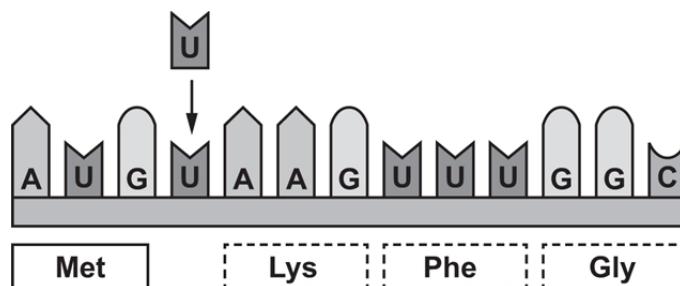
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**Directions:** Read the passage, then answer the questions that follow.

### Mutation

The diagram shows a certain type of mutation.



14. What type of mutation is shown in the diagram? Enter your answer in the space provided.

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15. Does the body have any built-in defense against mutations? Explain your answer. Enter your answer in the space provided.

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