

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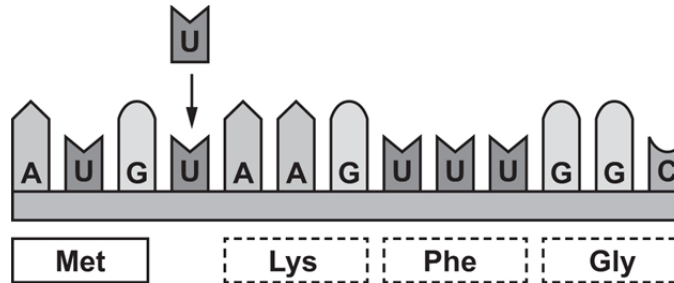
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**Directions:** Read the passage, then answer the questions that follow.

### 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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