

Assessment

Chapter Test

DNA, RNA, and Proteins

In the space provided, write T if the statement is true or F if it is false.

- _____ 1. The process for transferring a gene's instruction for making a protein to an mRNA molecule is transcription.
- _____ 2. The work of Chargaff, Wilkins, and Franklin helped to define the shape and structure of DNA.
- _____ 3. Avery and his team found that protein bases were the genetic material.
- _____ 4. A three-carbon sugar is found in DNA nucleotides.

In the space provided, write the letter of the term or phrase that best completes each sentence or answers each question.

- _____ 5. The subunits that make up DNA are called
 - a. genes.
 - b. bases.
 - c. nucleotides.
- _____ 6. RNA differs from DNA because RNA
 - a. is single-stranded.
 - b. contains a different sugar.
 - c. Both a and b
- _____ 7. The enzyme that separates DNA by breaking the hydrogen bonds that link the nitrogenous bases is the
 - a. DNA polymerase.
 - b. RNA polymerase.
 - c. helicase.
- _____ 8. Proofreading is the process by which DNA polymerase is able to correct nucleotides that are
 - a. mismatched.
 - b. resting.
 - c. bonded.
- _____ 9. Watson and Crick found that DNA molecules have the shape of a
 - a. single-strand.
 - b. gene.
 - c. double helix.

Chapter Test *continued*

- _____ 10. DNA polymerase is an enzyme involved in
a. catalyzing the formation of DNA.
b. unwinding the DNA double helix.
c. repressing the formation of DNA.
- _____ 11. What is the process by which DNA is copied?
a. sugar-pairing.
b. replication.
c. pairing.

Use the word bank to complete each statement.

translation complementary
helix intron

12. The shape of DNA is a double _____.
13. _____ is the process that puts together the amino acids that make up a protein.
14. The relationship of the base-pairs making up the DNA strands is _____ because they fit like puzzle pieces.
15. A long segment of DNA that has no coding information is a(n) _____.

Match the words on the left with the statements on the right

- | | |
|---------------------|--|
| _____ 16. messenger | a. a three-nucleotide sequence that specifies an amino acid or “start” or “stop” signal |
| _____ 17. codon | b. a nitrogenous base in RNA |
| _____ 18. anticodon | c. this type of RNA carries the instructions for making a protein from a gene to the site of translation |
| _____ 19. uracil | d. a three-nucleotide sequence on a tRNA that recognizes a complementary sequence on mRNA |

Chapter Test *continued*

Use the word bank to complete each statement.

deoxyribose fork
codon nucleotide

20. A replication _____ is the area that results as the double helix separates during replication.
21. The name for a DNA subunit is _____.
22. The five-carbon sugar found in DNA nucleotides is _____.
23. Each three-nucleotide sequence is called a(n) _____.