

QUIZ YOURSELF**● DNA: The Genetic Material**

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

- _____ 1. Each organism has a unique combination of characteristics encoded in molecules of
- protein.
 - enzymes.
 - carbohydrates.
 - DNA.
- _____ 2. Avery's experiments showed that transformation of bacteria to a virulent form
- is prevented by protein-destroying enzymes.
 - is prevented by DNA-destroying enzymes.
 - causes protein to become DNA.
 - is caused by protein.
- _____ 3. Which of the following most accurately describes the structure of a nucleotide?
- amino acid, sugar, base
 - phosphate group, sugar, carbohydrate
 - sugar, phosphate group, base
 - protein, phosphate group, base
- _____ 4. Purines and pyrimidines are
- bases found in amino acids.
 - names of specific types of DNA molecules.
 - able to replace phosphate groups from defective DNA.
 - bases found in nucleotides.
- _____ 5. Chargaff's Rules state that in DNA
- adenine = thymine; uracil = cytosine.
 - adenine = thymine; guanine = cytosine.
 - adenine = guanine; thymine = cytosine.
 - uracil = thymine; guanine = cytosine.

QUIZ YOURSELF

● DNA: The Genetic Material *continued*

- _____ 6. All of the following are true of the Hershey and Chase experiment EXCEPT:
- The viruses consisted of DNA surrounded by a protein coat.
 - Bacteriophages were used to infect *E. coli* bacteria.
 - Some of the viral DNA was labeled with radioactive sulfur.
 - After centrifugation, the radioactive phosphorus was found in the layer containing the bacterial cells.
- _____ 7. Rosalind Franklin's X-ray diffraction studies support the hypothesis that DNA molecules are shaped as
- straight chains.
 - helices.
 - branched chains.
 - rings.
- _____ 8. Which of the following is NOT true about DNA replication?
- It must occur before a cell can divide.
 - Two complementary strands are duplicated.
 - The double strand unwinds and unzips while it is being duplicated.
 - The process is catalyzed by enzymes called DNA mutagens.
- _____ 9. During DNA replication, a complimentary strand of DNA is made for each original DNA strand. Thus, if a portion of the original strand is CCTAGCT, then the new strand will be
- TTGCATG.
 - AAGTATC.
 - CCTAGCT.
 - GGATCGA.
- _____ 10. The attachment of nucleotides to form a complementary strand of DNA is
- catalyzed by DNA polymerase.
 - accomplished only in the presence of RNA.
 - carried out by the action of RNA polymerase.
 - the responsibility of the complementary DNA mutagens.