Nucleic Acids

SECTION 4 REVIEW

23. What are the three components of a nucleotide?

24. How are the two polynucleotide chains of DNA held together?

25. Describe in general terms the process of DNA replication.

26. What are the main differences between DNA and RNA?

27. Describe the similarities and differences between the three kinds of RNA molecules.

28. What is a ribosome? What is the function of a ribosome in a cell?

PRACTICE PROBLEMS

29. The following sequence of bases might be found on the gene that codes for oxytocin, the human pituitary hormone:
TACACAATGTAAGTTTTGACGGGGGACCCTATC

a. What is the sequence of bases on the complementary strand of DNA?

b. What is the sequence of bases that would occur on a strand of mRNA that was transcribed from the oxytocin DNA sequence?

MIXED REVIEW

30. Name the four main elements that make up compounds found in living organisms.

31. In each of the following groups, one of the items does not belong in the group. Identify the odd item in the group and explain why it is different. Explain how the other items are related.

a. glycogen, starch, fructose, and cellulose

b. amino acids, dipeptides, polypeptides, and proteins

c. fats, oils, and fatty acids

d. cytosine, adenine, and guanine

32. What is the human body's *storage* form of each of the following?

a. glucose

b. lipids

c. protein

33. Is each of the following statements about proteins and triglycerides true or false?

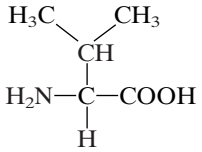
a. Both contain the amide functional group.

b. Both are a part of a major class of biochemical molecules.

c. Both hydrolyze in order to enter the metabolic pathway in humans.

34. Circle the hydrophobic part in each of the figures shown below.

a.



b.