The Chemistry of Carbon (page 44)

1. How many valence electrons does each carbon atom have? _____

_____

2. What gives carbon the ability to form chains that are almost unlimited in length?

_____

_____

Macromolecules (page 45)

3. Many of the molecules in living cells are so large that they are known as

_____.

4. What is the process called by which macromolecules are formed? _____
5. When monomers join together, what do they form? _____
6. What are four groups of organic compounds found in living things?
   a. _____
   b. _____
   c. _____
   d. _____

Carbohydrates (pages 45–46)

7. What atoms make up carbohydrates? _____

_____

8. Circle the letter of each sentence that is true about carbohydrates.
   a. Starches and sugars are examples of carbohydrates.
   b. Living things use them as their main source of energy.
   c. The monomers in sugar polymers are starch molecules.
   d. Plants and some animals use them for strength and rigidity.
9. Single sugar molecules are also called _____.
10. Circle the letter of each monosaccharide.
    a. galactose c. glucose
    b. glycogen d. fructose

11. What are polysaccharides? _____

_____

12. How do plants and animals store excess sugar? _____

_____

Lipids (pages 46–47)

13. What kinds of atoms are lipids mostly made of? _____

_____

_____

14. What are three common categories of lipids?

    a. _____ b. _____ c. _____

15. Many lipids are formed when a glycerol molecule combines with compounds called _____.

16. Circle the letter of each way that fats are used in living things.

    a. As parts of biological membranes

    b. To store energy

    c. To give plants rigidity

    d. As chemical messengers

17. Complete the table about lipids.

LIPIDS

Kind of Lipid	Description
	Each carbon atom in a lipid's fatty acid chain is joined to another carbon atom by a single bond.
Unsaturated	
	A lipid's fatty acids contain more than one double bond.

Nucleic Acids (page 47)

18. Nucleic acids contain what kinds of atoms? _____

_____

19. The monomers that make up nucleic acids are known as _____.

20. A nucleotide consists of what three parts? _____

_____

_____

21. What is the function of nucleic acids in living things? _____

_____

_____

22. What are two kinds of nucleic acids?

    a. _____

    b. _____

Proteins (pages 47–48)

23. Proteins contain what kinds of atoms? _____

_____

_____

24. Proteins are polymers of molecules called _____.

25. What are four roles that proteins play in living things?

    a. _____

    b. _____

    c. _____

    d. _____