

1.2

CHEMISTRY FAR AND WIDE

Section Review

Objectives

- Identify some areas of research affected by chemistry and describe examples of research in chemistry
- Distinguish between macroscopic and microscopic views

Vocabulary

- macroscopic
- microscopic
- biotechnology
- pollutant

Part A Completion

Use this completion exercise to check your understanding of the concepts and terms that are introduced in this section. Each blank can be completed with a term, short phrase, or number.

Chemists design materials to fit 1 needs. Objects that can be seen only under magnification are part of the 2 world.

Chemistry is important in the production and conservation of 3. One of the easiest ways to 4 energy is through the use of insulation. New kinds of 5 for the storage of energy are also being developed.

Chemistry plays a role in efforts to increase the 6 of farmland and to protect 7 from insect pests. The trend is toward chemicals that treat 8 problems.

Astronomy and 9 exploration also benefit from chemistry. For example, a robotic vehicle delivered to the surface of Mars can determine the 10 of Mars rocks.

Part B True-False

Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

- _____ 9. Insulin can be produced when genes from bacteria are inserted into humans.
- _____ 10. World energy demand is decreasing.

- _____ 11. Some human genes have been inserted into bacteria.
- _____ 12. Low levels of lead in the blood can permanently damage the nervous system of a growing child.

Part C Matching

Match each description in Column B to the correct term in Column A.

Column A

Column B

- | | |
|--------------------------------|---|
| _____ 13. macroscopic | a. material found in air, water, or soil that is harmful to humans or other organisms |
| _____ 14. pollutant | b. describes objects that can be seen only under magnification |
| _____ 15. biotechnology | c. applies science to the production of biological products or processes |
| _____ 16. microscopic | d. describes objects that are large enough to see with the unaided eye |
| _____ 17. fossil fuels | e. determined the sequence of genes in human DNA |
| _____ 18. Human Genome Project | f. materials formed from the remains of ancient plants and animals |

Part D Questions and Problems

Answer the following questions in the space provided.

- 19. Describe two ways biotechnology can help treat diseases.

- 20. Name three factors that decrease crop productivity.

- 21. Explain how scientists know that water once existed on the surface on Mars.
