

1.1

CHEMISTRY

Section Review

Objectives

- Identify five traditional areas of study in chemistry
- Relate pure chemistry to applied chemistry
- Identify reasons to study chemistry

Vocabulary

- | | | |
|-----------------------|------------------------|---------------------|
| • matter | • biochemistry | • pure chemistry |
| • chemistry | • analytical chemistry | • applied chemistry |
| • organic chemistry | • physical chemistry | • technology |
| • inorganic chemistry | | |

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.

Matter is anything that has 1 and occupies 2. 1. _____

Chemistry is the study of the 3 of matter and the 2. _____

4 that matter undergoes. Chemistry has traditionally been 3. _____

divided into 5 areas of study. Organic chemistry is the study 4. _____

of chemicals that contain 6, while inorganic chemistry is 5. _____

primarily the study of chemicals that do not contain 7. 6. _____

Biochemistry is the study of the processes that take place 7. _____

in 8. 9 is focused on the composition of matter, 8. _____

while 10 deals with the mechanism, the rate, and the 9. _____

11 that occurs when matter undergoes a change. A 10. _____

chemist is likely to be working in 12 area of chemistry at 11. _____

the same time. 12. _____

Part B True-False

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

- _____ 13. Organic chemistry is the study of chemicals that do not contain carbon.
- _____ 14. The goal of chemistry is to accumulate knowledge.
- _____ 15. Biochemistry involves the study of living organisms.
- _____ 16. An organic chemist uses analytical chemistry.
- _____ 17. Applied chemistry is used to attain specific goals.

Part C Matching

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

Column A

- _____ 18. chemistry
- _____ 19. pure chemistry
- _____ 20. organic chemistry
- _____ 21. inorganic chemistry
- _____ 22. technology
- _____ 23. physical chemistry
- _____ 24. analytical chemistry
- _____ 25. matter
- _____ 26. biochemistry
- _____ 27. applied chemistry

Column B

- a. anything that has mass and occupies space
- b. study of essentially all chemicals that contain carbon
- c. study of the composition of substances
- d. study of essentially all chemicals that do not contain carbon
- e. study of the chemistry of living organisms
- f. study of the composition of matter and the changes it undergoes
- g. study of the mechanism, the rate, and the energy transfer that occurs when matter undergoes a change
- h. the means by which a society provides its members with those things needed and desired
- i. the pursuit of chemistry knowledge for its own sake
- j. research that is directed toward a practical goal or application

Part D Questions and Problems

Answer the following questions in the space provided.

28. Match each activity below to one of the five branches of chemistry.

- a. determining the energy transfer when water boils
- b. finding out how much nitrogen is in a sample of air
- c. studying the process of photosynthesis in plants
- d. manufacturing nylon, which contains carbon
