

Chapter 1 Review

Name \_\_\_\_\_

Period \_\_\_\_\_ Date \_\_\_\_\_

1. Match the project to the appropriate field of chemistry (inorganic chemistry, organic chemistry, biochemistry, analytical chemistry, or physical chemistry).

a. Determine the composition of a moon rock sample. \_\_\_\_\_

b. Do research on making a new medicine to treat high blood pressure. \_\_\_\_\_

c. Investigate ways to regulate the rate of gasoline burning in an automobile engine. \_\_\_\_\_

d. Develop a plastic that can be decomposed by bacteria. \_\_\_\_\_

e. Improve the method for extracting iron from iron ore. \_\_\_\_\_

2. Classify the following examples as examples of pure chemistry or applied chemistry.

a. developing a shampoo to be used with dry or damaged hair \_\_\_\_\_

b. determining the conditions required for materials to burn \_\_\_\_\_

c. figuring out the general structure of materials such as cotton and silk \_\_\_\_\_

d. designing a large-scale method for producing nylon \_\_\_\_\_

3. One cold morning your car does not start. Make two hypotheses about why the car will not start.

4. Answer the following in standard exponential form.

a.  $2.6 \times 10^9 \times 5.0 \times 10^{14} =$

c.  $1.3 \times 10^{10} + 4.7 \times 10^8 =$

b.  $\frac{3.6 \times 10^5}{1.2 \times 10^{-7} \times 4.0 \times 10^5} =$

d.  $3.7 \times 10^{10} - 6.2 \times 10^{11} =$

5. a. Propose a hypothesis for the following observation. Moisture forms on the outside of a cold glass.

b. Describe an experiment that you could do to test your hypothesis.

6. Discuss the statement "No theory is written in stone."

7. Apples are selling for \$1.50 a pound. Each apple weighs, on average, 0.50 pounds. You have \$6.00. How many apples can you purchase? (Show your work)

Match the description with the correct word

- \_\_\_\_\_ 8. the pursuit of chemical knowledge for its own sake
- \_\_\_\_\_ 9. the means by which a society provides its members with those things needed and desired
- \_\_\_\_\_ 10. the science concerned with the composition of matter and the changes that matter undergoes
- \_\_\_\_\_ 11. field of chemistry that is concerned with the composition of matter
- \_\_\_\_\_ 12. describe an object that can be seen only under magnification
- \_\_\_\_\_ 13. the study of essentially all chemicals containing carbon
- \_\_\_\_\_ 14. field of study that is concerned with the chemistry of living organisms
- \_\_\_\_\_ 15. a logical approach to the solution of scientific problems
- \_\_\_\_\_ 16. applies science to the production of biological products or processes
- \_\_\_\_\_ 17. information obtained directly by using your senses
- \_\_\_\_\_ 18. a method of testing a hypothesis
- \_\_\_\_\_ 19. variable that one changes during an experiment
- \_\_\_\_\_ 20. a proposed explanation for what is observed
- \_\_\_\_\_ 21. a well-tested explanation for a broad set of observations
- \_\_\_\_\_ 22. describes many observations but does not explain them

- A. chemistry
- B. organic chemistry
- C. pure chemistry
- D. analytical chemistry
- E. theory
- F. biochemistry
- G. observation
- H. hypothesis
- I. scientific method
- J. experiment
- K. scientific law
- L. technology
- M. microscopic
- N. biotechnology
- O. manipulated variable

Answer the following questions in the space provided.

23. Classify each step in the following application of the scientific method as an observation, a hypothesis, an experiment, or a scientific law.

- a. An iron ball falls to the ground when you drop it. \_\_\_\_\_
- b. Earth is a giant magnet, which attracts iron objects. \_\_\_\_\_
- c. An iron ball and a piece of wood are dropped from the same height. \_\_\_\_\_
- d. The iron ball and wood fall at the same rate. \_\_\_\_\_
- e. Gravity attracts every object in the universe to every other object. \_\_\_\_\_

24. What level of thinking is required for questions 8-22? Explain

25. What level of thinking is required for question 23? Explain.

Write the answers to the Standardized Test Prep Questions (pg. 37)

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|----------|-----------|-----------|-----------|
| _____ 1. | 8. _____  | 11. _____ | 14. _____ |
| _____ 2. | 9. _____  | 12. _____ | 15. _____ |
| _____ 3. | 10. _____ | 13. _____ |           |