



VOCABULARY REVIEW

Match the correct vocabulary term to each numbered statement. Write the letter of the correct term next to the number.

Column A

- _____ 1. branch of chemistry that involves the theories and experiments that describe the behavior of chemicals
- _____ 2. branch of chemistry that is primarily the study of all substances that do not contain carbon
- _____ 3. the science concerned with the composition of matter and the changes that matter undergoes
- _____ 4. field of chemistry that is concerned with the composition of matter
- _____ 5. the study of essentially all substances containing carbon
- _____ 6. field of study that is concerned with the chemistry of living organisms
- _____ 7. a logical approach to the solution of scientific problems
- _____ 8. information obtained directly by using your senses
- _____ 9. a method of testing a hypothesis
- _____ 10. a proposed explanation or reason for what is observed
- _____ 11. a broad and extensively tested explanation of why experiments give certain results
- _____ 12. describes a natural phenomenon but does not explain it

Column B

- a. chemistry
- b. organic chemistry
- c. inorganic chemistry
- d. analytical chemistry
- e. physical chemistry
- f. theory
- g. biochemistry
- h. observation
- i. hypothesis
- j. scientific method
- k. experiment
- l. scientific law

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VOCABULARY REVIEW

Each clue describes a vocabulary term. Read the clues and write the letters of each term on the lines provided.

1. Clue: part of a system having uniform composition and properties.

_____ ○ _____

2. Clue: one- or two-letter designation for an element. (2 words)

○ _____ ○ _____

3. Clue: anything that has mass and takes up space.

_____ ○ _____

4. Clue: simplest forms of matter that can exist under normal laboratory conditions.

_____ ○ _____

5. Clue: the amount of matter an object contains.

_____ ○ _____

6. Clue: matter that has a definite shape and volume.

○ _____

7. Clue: a physical blend of two or more substances.

_____ ○ _____

8. Clue: matter that takes both the shape and volume of its container.

_____ ○ _____

Write the letters found inside the circles on the lines below. Then unscramble them to find the term that describes matter that has a uniform and definite composition.

Scrambled letters:

Solution:

4. Which of the following are pure substances? Which are mixtures?
a. ethanol b. vinegar c. motor oil d. helium
5. Use the system types from Table 2.3 to describe each of the following solutions.
a. ethanol in water b. sucrose in ethanol c. carbon in iron d. oxygen in water

SECTION 2.3 ELEMENTS AND COMPOUNDS

1. What elements make up chloroform, chemical formula CHCl_3 ?
2. Name the elements represented by the following chemical symbols.
a. Pb b. K c. Au d. Fe
3. Classify the following as elements, compounds, or mixtures.
a. salt b. water c. iron d. sterling silver
4. Write the chemical symbol for each of the following elements.
a. chlorine b. sodium c. silver d. carbon
5. A liquid is allowed to evaporate and leaves no residue. Can you determine whether it was an element, a compound, or a mixture?
6. Which of the following is not an element?
a. copper b. sulfur c. ammonia d. helium

SECTION 2.4 CHEMICAL REACTIONS

1. Which one of the following is a chemical change?
a. gasoline boils c. gasoline burns
b. lead is added to gasoline d. gasoline is poured into a tank
2. Classify each of the following changes as physical or chemical.
a. dew is dried by the sun c. grape juice is converted to wine
b. a dark cloth is faded by the sunlight d. soap is dissolved in water
3. In the chemical reaction carbon dioxide plus water \rightarrow carbonic acid, what does the arrow stand for?
4. Name the product(s) in problem 3.
5. Name the reactant(s) in problem 3.
6. If 44 grams of carbon dioxide react completely with 18 grams of water, what is the mass of carbonic acid formed?
7. In an engine, octane combines with oxygen to form carbon dioxide and water. If 22.8 grams of octane combine completely with 80 grams of oxygen to form 70.4 grams of carbon dioxide, what mass of water is formed?
8. What is the name of the chemical law on which problems 6 and 7 are based?

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MATTER AND CHANGE
PRACTICE PROBLEMS

In your notebook, solve the following problems.

SECTION 2.1 MATTER

1. Which of the following is *not* a physical change?
 - a. dissolving sugar in water
 - b. burning gasoline in an engine
 - c. evaporating sea water to obtain salt
 - d. slicing a piece of bread
2. Which of the following is *not* a property of a gas?
 - a. has a definite shape
 - b. has no definite volume
 - c. assumes the shape of its container
 - d. easily compressible
3. Which of the following is *not* a physical property of sucrose?
 - a. solid at room temperature
 - b. decomposes when heated
 - c. dissolves in water
 - d. tastes sweet
4. Which of the following is typically in a different physical state than the other three at room temperature?
 - a. salt
 - b. sugar
 - c. flour
 - d. water
5. Complete the following table.

physical state	definite shape?	definite volume?	readily compressible?
gas			
	no		no
	yes		

Use Table 2.1 to answer the following questions.

- ~~6. Which substance is a colored gas?~~
- ~~7. Which liquids boil at a lower temperature than water?~~
- ~~8. For which substances would 2 cm³ have a mass greater than 6 g?~~

SECTION 2.2 MIXTURES

1. How might one separate a mixture of water and salt?
2. What is a homogeneous mixture?
3. Which of the following mixtures are homogeneous? Which are heterogeneous?
 - a. gasoline
 - b. chunky peanut butter
 - c. oil and vinegar salad dressing
 - d. orange soda

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