

Assessment

Chapter Test B**Chapter: Matter and Change**

PART I In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- C 1. Chemistry is a natural science that deals with the study of
a. living things and their life processes.
b. the physical features of Earth.
c. the composition, structure, properties, and changes of matter.
d. the composition, motion, and relative positions of stars and planets.
- D 2. The branch of chemistry in which the compositions of materials are identified is known as
a. biochemistry.
b. organic chemistry.
c. physical chemistry.
d. analytical chemistry.
- A 3. Which of these is an example of an extensive property?
a. mass b. density c. color d. boiling point
- D 4. Which of these is an example of an element?
a. sugar b. soil c. water d. oxygen
- C 5. Which of these is an example of a heterogeneous mixture?
a. salt b. nitrogen c. mud d. air
- C 6. Which process is a chemical change?
a. heating to boiling
b. dissolving in alcohol
c. burning in air
d. slicing into two pieces
- C 7. At sea level, water boils at 100°C. This is an example of a(n)
a. chemical property. c. physical property.
b. extensive property. d. chemical change.
- A 8. Every pure chemical compound consists of two or more elements that
a. are combined chemically.
b. can be separated by a physical change.
c. cannot be separated.
d. are combined in any proportion.

Chapter Test B, *continued***PART II Write the correct term (or terms) in the space provided.**

9. The two properties that all matter has in common are mass & volume
10. In the periodic table, elements in the vertical columns together form a(n) group or family
11. A mixture that has the same proportion of components throughout is considered to be homogeneous
12. The substances that are formed by a chemical change are called the products.
13. metals are elements that are good conductors of electricity.
14. The state of matter in which a material has a definite volume and a definite shape is the Solid state
15. Elements are arranged in the periodic table according to their chemical properties
16. The smallest unit of an element that has the properties of that element is a(n) Atom.
17. When atoms of two or more elements are chemically bonded, the substance formed is a(n) Compound
18. If testing shows an element is a poor conductor of electricity, it is probably a(n) nonmetal
19. A blend of two or more kinds of matter, each of which retains its own identity and properties, is a(n) mixture.
20. If a material is tested and every sample has exactly the same properties and the same composition, it is a(n) pure substance
- skip → 21. BASIC research is carried out for the sake of increasing knowledge.
22. A(n) metalloid is an element that has some characteristics of metals and some characteristics of nonmetals.

Chapter Test B, continued

PART III For each of the following chemical reactions, identify the reactants and the products.

23. carbon + oxygen → carbon dioxide

reactant(s): Carbon + oxygen

product(s): Carbondioxide

24. mercury(II) oxide → mercury + oxygen

reactant(s): mercury(II) oxide

product(s): mecury + oxygen

PART IV On the line to the left of each symbol, write the letter of the correct element name.

f 25. W

a. silicon

g 26. Cl

b. sodium

C 27. Co

c. cobalt

A 28. Si

d. iron

B 29. Na

e. tin

I 30. Cu

f. tungsten

D 31. Fe

g. chlorine

H 32. Au

h. gold

E 33. Sn

i. copper

j. silver

PART V Classify each of the following as either a *physical change* or a *chemical change*.

34. P _____ melting an ice cube

35. C _____ burning a piece of paper

36. P _____ slicing a loaf of bread

37. P _____ sharpening a pencil

38. C _____ decomposing mercury(II) oxide

39. P _____ dissolving sugar in water

Chapter Test B, *continued***PART VI Write the answers to the following questions in the space provided.**

40. Explain the differences between solid, liquid, and gaseous states in terms of the arrangement of the particles.

Solid - particles packed tightly - only vibrational motion
 Liquid - particles close together, but can flow around each other
 Gas - particles very far apart, constant motion.

41. Contrast mixtures and pure substances.

Pure substance - contains only 1 type of substance;
 either an element or compound. Composition is constant
 Mixture - 1 or more substances, may vary in
 composition from 1 sample to another.

42. State the law of conservation of energy.

Energy can not be created or destroyed
 but may change form. Example -
 mechanical Energy to Electrical Energy
 in a generator.

43. Contrast heterogeneous and homogeneous mixtures.

Sand in
water

< Heterogeneous - not uniform in composition;
 can see different parts of mixture

Salt
Water
Solution

< Homogeneous - uniform in composition;
 all parts of mixture have same properties

44. How could you prove that water is a compound and not an element?

Compounds can be separated by chemical
 change into their elements. If you run
 electric current through water you get
 its elements, Hydrogen and Oxygen.