Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) Which of the following describes a substance in the solid physical state?   1) _____
    A) The substance compresses significantly.
    B) The substance has a variable volume.
    C) The substance has a variable shape.
    D) all of the above
    E) none of the above

2) What is the term for a change of state from a liquid to a gas?   2) _____
    A) vaporizing
    B) melting
    C) condensing
    D) freezing
    E) none of the above

3) Which of the following can be separated into two or more pure substances using a physical   3) _____
method?
    A) element
    B) mixture
    C) compound
    D) all of the above
    E) none of the above

4) Brass is an alloy of copper and zinc and the percentage of copper can vary from 60–80%. Which of   4) _____
the following describes brass?
    A) homogeneous mixture
    B) compound
    C) heterogeneous mixture
    D) element
    E) none of the above

5) Which of the following is a general characteristic of a nonmetallic element?   5) _____
    A) pliable
    B) shiny luster
    C) reacts with nonmetals
    D) high melting point
    E) none of the above

6) Which of the following is a general characteristic of a metallic element?   6) _____
    A) reacts with nonmetals
    B) reacts with metals
    C) dull, brittle solid
    D) low melting point
    E) none of the above

7) Which of the following is an example of a physical property?   7) _____
   A) appearance
   B) specific heat
   C) boiling point
   D) hardness
   E) all of the above

8) Which of the following is an example of a physical change?   8) _____
   A) converting nitrogen gas to ammonia
   B) converting hydrogen to water
   C) converting iron to a steel alloy
   D) converting coal to carbon dioxide
   E) converting sulfur to sulfuric acid

9) If 0.391 g of potassium metal reacts with 1.269 g of iodine, what is the mass of potassium iodide   9) _____
   produced?
   A) 0.878 g
   B) 1.660 g
   C) 0.391 g
   D) 1.269 g
   E) impossible to predict from the given information

10) What happens to the velocity of a molecule when a gas is heated?   10) _____
   A) velocity increases
   B) velocity decreases
   C) depends on the gas
   D) velocity remains constant
   E) none of the above

11) According to the kinetic theory, what happens to gaseous molecules when the temperature of a gas   11) _____
   decreases?
   A) Kinetic energy and velocity decrease.
   B) Kinetic energy and velocity remain constant.
   C) Kinetic energy increases and velocity decreases.
   D) Kinetic energy and velocity increase.
   E) Kinetic energy decreases and velocity increases.

12) A fuel cell contains hydrogen and oxygen gas. The gases react explosively and the energy converts   12) _____
   water to steam. The steam drives a turbine which turns a generator to produce electricity. What two
   forms of energy are represented by the *fuel cell* and the *turbine*?
   A) electrical energy and heat energy
   B) nuclear energy and mechanical energy
   C) chemical energy and mechanical energy
   D) chemical energy and heat energy
   E) electrical energy and mechanical energy

13) Which of the following is separated into elements by a chemical method? 13) _____
    A) compound
    B) homogeneous mixture
    C) heterogeneous mixture
    D) all of the above
    E) none of the above

14) Which of the following remains constant for the reactants and products in a gaseous chemical 14) _____
reaction?
    A) mass
    B) density
    C) chemical formula
    D) volume
    E) all of the above

15) If 2.43 g of magnesium reacts with oxygen to produce 4.03 g of magnesium oxide, what is the mass 15) _____
of reacting oxygen gas?
    A) 4.03 g
    B) 1.60 g
    C) 2.43 g
    D) 6.46 g
    E) impossible to predict from the given information