Science Unit 5 Chemistry Review Dugger

1. Which statement ***best*** explains how periods on the periodic table are organized?

A. increasing atomic number from left to right
B. increasing number of neutrons from left to right
C. decreasing number of electrons from left to right
D. decreasing atomic mass number from left to right

2. How does a balanced chemical equation satisfy the Law of Conservation of Mass?

A. During a chemical reaction, the total amount of matter stays the same.
B. During a chemical reaction, matter is destroyed.
C. During a chemical reaction, one or more new substances are formed.
D. During a chemical reaction, the total number of atoms increases.

3. Which ***best*** explains how elements are arranged on the modern periodic table?

A. Elements are arranged from fewest protons to most protons.
B. Elements are arranged from most protons to fewest protons.
C. Elements are arranged from fewest neutrons to most neutrons.

4. The physical properties of element *X* are shown in the table below.

Physical Properties of *X*

malleable
ductile
shiny
conducts heat
conducts electricity

Which ***most likely*** represents the identity of element *X*?

A. carbon (C)
B. copper (Cu)
C. iodine (I)
D. sulfur (S)

5. If a chemical reaction such as photosynthesis begins with 6 atoms of carbon (C), how many atoms of carbon (C) should be in the products?

A. 12 atoms of carbon (C)
B. 6 atoms of carbon (C)
C. 3 atoms of carbon (C)
D. 2 atoms of carbon (C)

6. What happens to water molecules during the boiling process?

A. They move faster and move farther apart as they absorb heat.
B. They move faster and remain close together as they absorb heat.
C. They move more slowly but move farther apart as they lose heat.
D. They move faster and move farther apart as they lose heat.

7. An ice cube is put into a heated pan. What will ***most likely*** happen to the molecules in the ice as the ice is heated?

A. The molecules will begin to move slower.
B. The molecules will begin to move faster.
C. The molecules will begin to increase in density.
D. The molecules will begin to condense in the air.

8. Which is true of any physical or chemical reaction?

A. Mass increases.
B. Mass decreases.
C. Mass fluctuates.
D. Mass is conserved.

9. What is the smallest unit of an element that still retains the element's properties?

A. a proton
B. a crystal
C. an atom
D. a molecule

10. Which ***best*** represents a homogeneous mixture?
A. nitrogen gas and oxygen gas
B. sand and iron particles
C. soil from the garden
D. water and sand

11. A compound containing lithium and sulfur reacts with a compound containing aluminum and iodine. Which ***best*** describes the elements present in the products of this reaction?
A. lithium and iodine
B. aluminum and sulfur
C. aluminum, sulfur, and iodine
D. lithium, sulfur, aluminum, and iodine

12. Which pair of elements has the ***most*** similar properties?
A. Li and B
B. I and Ca
C. K and He
D. N and P

13. How are elements on the periodic table organized by their properties?
A. in groups
B. by masses
C. in periods

14. Which element, in large amounts, is poisonous to humans?
A. arsenic
B. carbon dioxide
C. sodium chloride

15. Which elements are ***most likely*** to react in the same manner in a chemical reaction?

A. elements in the same group

B. elements in the same period

C. elements with similar atomic masses

16. Which ***best*** represents a balanced equation?

A. 120 grams of carbon plus 20 grams of oxygen → 200 grams of carbon dioxide

B. 120 grams of carbon plus 50 grams of oxygen → 200 grams of carbon dioxide

C. 120 grams of carbon plus 80 grams of oxygen → 200 grams of carbon dioxide

17. Which is the ***best*** example of a pure substance?

A. peanuts

B. milk

C. gold

D. air

18. Which ***best*** explains why the total mass of the product(s) would be less than the total weight of the reactant(s) after a chemical reaction?

A. A physical change occurred.

B. Atoms involved in the reaction lost mass.

C. Precipitates were created in the new solution.

D. Gases were released to the atmosphere.

19. Which shows one example of a physical change and one example of a chemical change?

A. boiling water and melting wax

B. rusting iron and baking a cake

C. dissolving powder and shredding paper

D. freezing water and burning coal

20. What is the ***best*** description for iron rusting quickly when exposed to water and salt?

A. a change of state

B. a chemical reaction

C. a physical reaction