

Student Name _____ Class _____

1.



This symbol means ...

- A. toxic
- B. reactive
- C. corrosive
- D. poisonous

2.



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3. The particle model helps us to understand about the state of a substance by the number of particles that appear to be moving and the relative spaces between the particles. A liquid substance would be represented most likely by model ...

A.



B.



C.

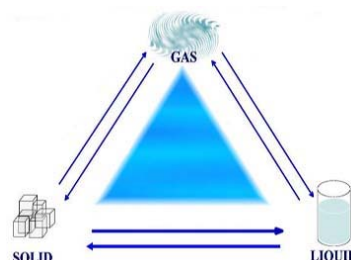


D.



4. When a substance undergoes a change of state it can use energy or give off energy. The change that occurs when a substance changes **from a liquid to a gas** is referred to as ...

- A. deposition
- B. sublimation
- C. vaporization
- D. condensation

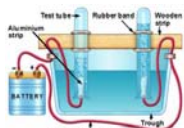


5. Brass is a solution that is best classified as ...
- A. element
 - B. solution
 - C. compound
 - D. mechanical
6. A colloid is a heterogeneous mixture that is composed of fine particles evenly distributed throughout another substance. An example of a colloid is ...
- A. milk
 - B. mayonnaise
 - C. flour in water
 - D. hair gel
7. Properties are characteristics that can be used to describe how a substance behaves. Ductility is a property that describes a substance's ...
- A. mixing ability
 - B. reaction with water
 - C. ability to stretch
 - D. toxic effect
8. The only list below that describes only chemical properties of a substance is ...
- A. reactivity, toxicity, stability, malleability
 - B. ductility, crystal shape, miscibility, solubility
 - C. malleability, smell, viscosity, miscibility
 - D. density, conductivity, combustibility, color
9. Physical or chemical change can be identified by evidence. When a substance undergoes a physical change the evidence used includes all of the following, **EXCEPT** ...
- A. colour
 - B. odour
 - C. toxicity
 - D. density

10. One of the procedures used today - credited to alchemists (part pharmacist and part mystic) - is a procedure used to separate mixtures, called ...
- dissolving
 - distillation**
 - desalination
 - disintegration

11. Lavoisier was one of the first chemists to use a balanced view of chemical change, which we now call the **Law of** ...
- Conservation of Mass**
 - Definite Composition
 - Multiple Proportions
 - Combustion

12.



Using electricity to split molecules into their elements is a process called ...

- electrolysis**
 - electricity
 - electroplating
 - electrorefining
13. John Dalton developed a theory that helped explain what happened in the electrolysis of water and was a new way to explain chemical facts and laws. His theory was called the ...
- Quantum Theory
 - Atomic Theory**
 - Raisin Bun Theory
 - Plum Pudding Theory
14. In science, these do not explain anything. They simply describe and summarize what happens.
- models
 - theories
 - ideas
 - laws**
15. ♀ Early chemists used the planets to identify the elements known to them. This later was a problem, when more elements were discovered, because they ran out of planets.
- This symbol represent the planet and element ...
- Mars - iron
 - Venus - copper**
 - Mercury - mercury
 - Jupiter - tin
16. These elements have both metal and non-metal properties. Some of them are semi-conductors, which means, they can carry an electrical charge under special conditions. Making them great for computers and calculators. They are the ...
- Transition Metals
 - Rare Earth Elements
 - Metalloids**
 - Other Metals
17. The 6 elements in this group all have the maximum number of electrons possible in their outer s shell which makes them **stable**. They are known as the ...
- Halogens**
 - Alkali Metals
 - Noble Gases
 - Alkaline Earth Metals

18. Mendeleev arranged the element cards into a 'solitaire-like' table. He played with them, by sorting and arranging the elements in many different combinations. He was able to identify gaps where elements, would be able to fit, that were ...
- A. known to exist
 - B. not yet discovered
 - C. rare earth elements
 - D. identified by alchemists
19. In 1915 the Modern Periodic Table was reorganized, including more information about each element with a focus on ...
- A. atomic structure
 - B. Chemical properties
 - C. Physical properties
 - D. reactivity rating
20. Vertical columns form a **group** of elements (*numbered 1-18*) The horizontal rows (*numbered 1-7*) are called ...
- A. lists
 - B. types
 - C. family
 - D. periods
21. In the periodic table the following elements would be identified as the Noble Gases.
- A. Be, Mg, Ca, Sr, Ba, Ra
 - B. Li, Na, K, Rb, Cs, Fr
 - C. He, Ne, Ar, Kr, Xe, Rn
 - D. Rf, Db, Sg, Bh, Hs, Mt, Uun
22. As you move across the periodic table the properties of the elements change. The most reactive metals include ...
- A. sodium and lithium
 - B. iron and copper
 - C. aluminum and carbon
 - D. lead and zinc
23. When any of the 112 elements combine into groups of 2 or more they form compounds. If atoms of elements are shared, this type of compound is formed.
- A. ionic
 - B. atomic
 - C. aqueous
 - D. molecular
24. Guyton de Morveau in France developed a standardized chemical naming system in 1787 to determine a chemical name. The type of element that is always first is the ...
- A. acid
 - B. base
 - C. metal
 - D. Non-metal
25. The only compound that contains three elements is ...
- A. $\text{H}_2\text{O}_{(l)}$ Water
 - B. $\text{C}_6\text{H}_{12}\text{O}_{6(s)}$ Glucose
 - C. $\text{CO}_{2(g)}$ Carbon dioxide
 - D. $\text{NO}_{2(g)}$ Nitrogen dioxide
26. In molecular pure substances the bonding between atoms is strong, but the attraction between the molecules is weak. They are good insulators, poor conductors and have a distinct crystal shape. This type of molecular compound is produced when ...
- A. metals combine
 - B. non-metals combine
 - C. gases and solids combine
 - D. non-metals and metals combine

27. A molecule is the smallest independent unit of a pure substance. **Diatomic** molecules are molecules made up of.
- 2 atoms of the same element
 - more than 2 atoms of an element
 - 1 atom from 2 different elements
 - 2 atoms from 2 different elements
28. When dissolved in water, the metal (**Na**) loses an electron and the nonmetal (**Cl₂**) gains an electron forming an aqueous solution of ions like these ...
- (Na)⁺ (Cl₂)⁺
 - (Na)⁻ (Cl₂)⁺
 - (Na)⁺ (Cl₂)⁻
 - (Na)⁻ (Cl₂)⁻
29. Some compounds of copper such as Copper II Sulfate used use a roman numeral in its chemical name. **Cu(II)SO₄** The roman numeral is used to show ...
- which ion is used
 - how the ion is used
 - the order of ions used
 - how many ions are used
30. Generally when looking at patterns in the periodic table this can be said about elements in a group ...
- They all have the same density
 - They react very violently
 - They all have the same ion charge
 - They all have different ion charges
31. A chemical change, which **releases** energy, is called ...
- exothermic
 - endothermic
 - combustable
 - dangerously reactive
32. A chemical equation may look complicated, but, by knowing what you know now, it should be much easier to understand
- $$\text{HC}_2\text{H}_3\text{O}_2(\text{l}) + \text{NaHCO}_3(\text{g}) \rightarrow \text{NaC}_2\text{H}_3\text{O}_2(\text{aq}) + \text{H}_2\text{O}(\text{l}) + \text{CO}_2(\text{g})$$
- This chemical equation happens when you mix ...
- vinegar and calcium carbonate
 - carbon dioxide and flavored water
 - calcium carbonate and water
 - vinegar and baking soda
33. The following word equation identifies what happens when hydrogen peroxide is left out in the sun. It changes to water and oxygen gas.
- Water + Oxygen \longrightarrow Hydrogen peroxide
 - Hydrogen peroxide + Energy \longrightarrow Water + Oxygen
 - Water + Energy + Oxygen \longrightarrow Hydrogen peroxide
 - Hydrogen peroxide + Oxygen \longrightarrow Water + Energy
34. To treat an injury in sport, **cold packs** are used to reduce the swelling where the injury occurs. These cold packs are examples of ...
- Endothermic reactions
 - Exothermic reactions
 - Combustion reactions
 - Corrosion reactions
35. Enzymes are catalysts used in our body to break down food. Without the presence of enzyme the reactions in our body would ...
- require much higher temperatures
 - produce different substances
 - happen more quickly
 - not occur at all

36. Some substances are used in foods to slow down decomposition. Plant seeds prevent germination until the right conditions are present by these natural ...
- A. reactors
 - B. enzymes
 - C. catalysts
 - D. inhibitors
37. By crushing a tablet of medicine before you take it, you are changing the reaction rate by changing the ...
- A. temperature
 - B. surface area
 - C. concentration
 - D. a catalyst
38. Corrosion protection involves protecting metal from contact with the environment and the factors that affect the reaction rate of this chemical reaction. Coating a corrosive metal with a thin layer of zinc is called ...
- A. galvanization
 - B. sterilization
 - C. electrolysis
 - D. electroengineering
39.
$$\begin{array}{ccccccc} & \text{H} & \text{H} & \text{H} & & & \\ & | & | & | & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{H} & & \text{(Propane C}_3\text{H}_8 \text{)} \\ & | & | & | & & & \\ & \text{H} & \text{H} & \text{H} & & & \end{array}$$
- The burning of propane (C_3H_8) in a barbeque is an exothermic reaction that produces heat to cook the food. If the heat is too intense, the products being cooked (will be burnt) will be changed into.
- A. hydrocarbons
 - B. hydrogen dioxide
 - C. carbon monoxide
 - D. pure carbon
40. Burning fossil fuels (such as propane) produces carbon monoxide, carbon dioxide, sulfur oxides, nitrogen oxides, smoke, soot, ash and heat. These products are called ...
- A. pesticides
 - B. pollutants
 - C. combustibles
 - D. hydrocarbons

Complete the Numerical Response Questions that follow on the next page

Numerical Response Items

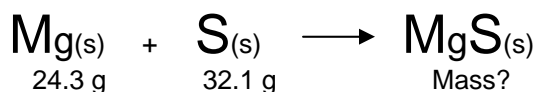
1. Match the description of the Theory of Matter with the time it occurred.

- 1- Chemists only investigated materials that had a high value to humans
- 2- The use of simple tools and the discovery of fire
- 3- The work of Dalton suggests matter is made up of elements
- 4- A group of Hittites discovered how to extract an element from rock

2
Stone
Age
1
Bronze
Age
4
Iron
Age
3
Atomic
Theory

| | | | |
|---|---|---|---|
| 2 | 1 | 4 | 3 |
| . | . | . | . |
| 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 |
| 7 | 7 | 7 | 7 |
| 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 |





2. The law of **conservation of mass** in a chemical reaction states that the mass of the products will equal the mass of the reactants.



What is the mass of **MgS** ?

| | | | |
|---|---|---|---|
| 5 | 6 | . | 4 |
| . | . | . | . |
| 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 |
| 7 | 7 | 7 | 7 |
| 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 |

3. Match the **WHMIS Symbol** with the description of the Hazard.

1

2

3

4


3
Toxic
1
Biohazard
4
Flammable
2
Oxidizing

| | | | |
|---|---|---|---|
| 3 | 1 | 4 | 2 |
| . | . | . | . |
| 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 |
| 7 | 7 | 7 | 7 |
| 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 |