

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.

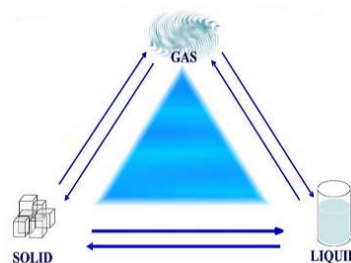


D.



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

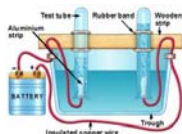


5. Brass is a solution that is best classified as ...
- A. element
  - B. solution
  - C. compound
  - D. mechanical
6. A colloid is a heterogeneous mixture that is composed of fine particles evenly distributed throughout another substance. An example of a colloid is ...
- A. milk
  - B. mayonnaise
  - 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 ...
- known to exist
  - not yet discovered
  - rare earth elements
  - identified by alchemists
19. In 1915 the Modern Periodic Table was reorganized, including more information about each element with a focus on ...
- atomic structure
  - Chemical properties
  - Physical properties
  - reactivity rating
20. Vertical columns form a **group** of elements (*numbered 1-18*) The horizontal rows (*numbered 1-7*) are called ...
- lists
  - types
  - family
  - periods
21. In the periodic table the following elements would be identified as the Noble Gases.
- Be, Mg, Ca, Sr, Ba, Ra
  - Li, Na, K, Rb, Cs, Fr
  - He, Ne, Ar, Kr, Xe, Rn
  - 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 ...
- sodium and lithium
  - iron and copper
  - aluminum and carbon
  - 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.
- ionic
  - atomic
  - aqueous
  - 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 ...
- acid
  - base
  - metal
  - Non-metal
25. The only compound that contains three elements is ...
- $\text{H}_2\text{O}_{(l)}$  Water
  - $\text{C}_6\text{H}_{12}\text{O}_{6(s)}$  Glucose
  - $\text{CO}_{2(g)}$  Carbon dioxide
  - $\text{NO}_{2(g)}$  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 ...
- metals combine
  - non-metals combine
  - gases and solids combine
  - 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 (**Cl<sub>2</sub>**) gains an electron forming an aqueous solution of ions like these ...
- (Na)<sup>+</sup> (Cl<sub>2</sub>)<sup>+</sup>
  - (Na)<sup>-</sup> (Cl<sub>2</sub>)<sup>+</sup>
  - (Na)<sup>+</sup> (Cl<sub>2</sub>)<sup>-</sup>
  - (Na)<sup>-</sup> (Cl<sub>2</sub>)<sup>-</sup>
29. Some compounds of copper such as Copper II Sulfate used use a roman numeral in its chemical name. **Cu(II)SO<sub>4</sub>** 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 ...
- reactors
  - enzymes
  - catalysts
  - inhibitors
37. By crushing a tablet of medicine before you take it, you are changing the reaction rate by changing the ...
- temperature
  - surface area
  - concentration
  - 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 ...
- galvanization
  - sterilization
  - electrolysis
  - electroengineering
39. 
$$\begin{array}{ccccccc} & \text{H} & \text{H} & \text{H} & & & \\ & | & | & | & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{H} & & \text{( Propane } \text{C}_3\text{H}_8 \text{ )} \\ & | & | & | & & & \\ & \text{H} & \text{H} & \text{H} & & & \end{array}$$
- The burning of propane (  $\text{C}_3\text{H}_8$  ) 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.
- hydrocarbons
  - hydrogen dioxide
  - carbon monoxide
  - 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 ...
- pesticides
  - pollutants
  - combustibles
  - hydrocarbons

Complete the Numerical Response Questions that follow on the next page

Numerical Response Items

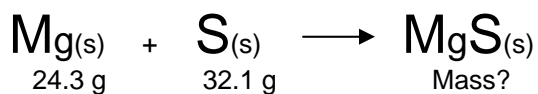
1. Match the description of the Theory of Matter with the time it occurred.

- 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

Stone Age
Bronze Age
Iron Age
Atomic Theory

	.	.	
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** ?

	.	.	
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.



Toxic
Biohazard
Flammable
Oxidizing

	.	.	
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