Chemistry Unit Review Sheet- Part 2

Read the descriptions below and determine whether each item describes an endothermic or an exothermic reaction.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1. A reaction that produces heat energy

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. A reaction that absorbs energy

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. Paper burns

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. Magnesium and Hydrogen peroxide react and the temperature increases

by 12°C

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 5. Alka seltzer reacts with water and the temperature drops by 9°C

Identify the following reactions types as synthesis, decomposition, single displacement, or double displacement. Write the name beside each reaction.

11. 11H2O + 12C 🡪 C12H22O11 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. 2HgO 🡪 2Hg + O2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. NaCl + HOH 🡪 HCl + NaOH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. Zn + H2 SO4 🡪 Zn SO4  + H2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Determine whether the equations below are balanced or unbalanced.

15) H2 + O2 🡪 H2 O2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16) Ag + O2  🡪 Ag2 O2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17) CdCO3 🡪 CdO + CO2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18) KI + H2 O2 🡪 KOH + I2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*NaOH + HCl 🡪 NaCl + H2 O + heat released*

26) Is the equation balanced?

27) Label the reactant side and the product side of the reaction

28) What type of reaction it is—synthesis, decomposition, single displacement, double

Displacement

Write the vocabulary word in the blank beside its definition or clue.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 29. You increase this by grinding or crushing a substance

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 30. These chemicals slow down reactions without altering the products

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 31. You increase this when you add more molecules of a chemical inside a

Set space

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 32. In order for a reaction to occur these must occur at proper angles

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 33. These chemicals speed up reactions without altering the products

Look at the equation below. The Law of Conservation says Matter and Energy can neither be created nor destroyed. So the total atoms of each element must be the same on both sides of the arrow. The arrow is an = sign in chemistry. The reactants are written on the left because you start the reaction with them. The products are on the right because they are produced in the reaction.

KI + H2 O2 🡪 KOH + I2

12 grams + X = 15 grams + 9 grams

34. What is x? \_\_\_\_\_\_\_\_\_

35. Add coefficients to balance this equation.

37. The temperature rose during the reaction so it would an endo or exothermic reaction?

Fill in the Blank-- Use your notes to help you.

**Word Bank- You may use more than once.**

Reactants

exothermic

endothermic

heat

physical

energy

new

reaction

decrease

synthesis

decomposition

replacement

conservation

atoms

38. A chemical change is often referred to as a chemical \_\_\_\_\_\_\_\_\_\_\_\_\_.

39. A chemical reaction involves the formation of a \_\_\_\_\_\_\_\_\_\_\_\_ substance.

40. Chemical Reactions involve a change in \_\_\_\_\_\_\_\_\_\_\_\_ properties and a change in \_\_\_\_\_\_\_\_\_\_.

41. Chemical reactions that release energy as \_\_\_\_\_\_ \_ are called \_\_\_\_\_\_\_\_\_\_\_\_ \_ reactions.

42. Chemical reactions that absorb energy are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_ reactions. You will observe a \_\_\_\_\_\_\_\_\_\_\_ in temperature.

43. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the ingredients that will react in a chemical reaction. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are those things that are formed as a result of the reaction.

44. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction is one where two elements combine to form a compound.

45. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction is one where a compound decomposes into simplier substances.

46. (Need to use your notes) Evidence of a chemical reaction may include:

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

47. The Law of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of mass states that the mass of the products always equals the mass of the \_\_\_\_\_\_\_\_\_\_\_\_ in a chemical reaction. In other words matter cannot be created or destroyed in a chemical reaction.

48. Why is it important to measure the mass of the products of a chemical reaction in a closed container?

49. When balancing chemical equations the number of \_\_\_\_\_\_\_\_\_\_\_\_ must be equal on both sides of the equation.

Chemistry Review Sheet- Part 1

**Matching:**

Identify whether each is a: A) Physical Property B) Chemical Property

1. Ability to burn
2. Color
3. Ability to tarnish
4. Ability to freeze
5. Ability to rust

Is it Chemical or Physical? **A. chemical change B. physical change**

1. \_\_\_ Water freezes and becomes ice
2. \_\_\_ HCl and Zn reacted. The Hydrogen gas collected in a balloon.
3. \_\_\_ Sugar and Sulfuric acid mix to form a hot, black solid.
4. \_\_\_ Ammonia and Copper pennies react to produce a dark substance called Copper Ammonium. The liquid color is now blue!
5. \_\_\_\_ A copper roof will slowly change color when exposed to the elements.
6. \_\_\_\_ A bike will rust in the presence of oxygen.
7. \_\_\_You add sugar to hot water and it dissolves

Which family is which?

***A. Carbon family b. Noble Gases C. Alkali metals D. Oxygen Family E.Halogens***

1. \_\_\_51) Sulfur is in this family
2. \_\_\_52) Most reactive METALs; silvery white; form lots of compounds; explosive in water
3. \_\_\_53) this family has silicon which is a metalloid used in making computer chips
4. ***\_\_\_***54) Most reactive NONMETALS on the periodic table; means salt producer; includes liquid, solids, & gases at room temperature
5. ***\_\_\_***55) inert family of elements; do not form compounds

Multiple Choice:

\_\_\_\_18) What is composed of more than one element?

1. Water b) Aluminum c) Carbon

\_\_\_19) On the periodic table elements that are grouped by common chemical properties are called families or \_\_\_\_\_\_\_\_\_\_\_\_\_

1. Periods b) groups

\_\_\_20) Elements are organized on the periodic table by increasing \_\_\_\_\_\_\_\_\_\_\_\_\_\_number and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ was credited as father of the periodic table:

a)Mass number/ Lavoisier b) atomic number/ Mendeleev

\_\_\_21) \_\_\_\_\_\_\_\_\_\_\_ on the periodic table are based on how the electrons are arranged. For example in row 2 all of the elements have electrons spread into 2 levels.

1. Periods b) groups

|  |  |
| --- | --- |
| **Substance** | **Density g/ml** |
| Ice | 0.93 |
| Corn syrup | 1.38 |
| Mercury | 13.5 |

\_\_\_22) Which substance would sink in the density column above?

1. Ice b) Corn syrup c) Mercury d) corn syrup and mercury

23) LABEL THE COLUMN IN ORDER FROM least dense at the TOP to most dense at the bottom!

\_\_\_24)If rubbing alcohol were added to the density column and it has a density of 0.94 g/ml where would it be?

1. Between ice and corn syrup b) on top c) between corn syrup and mercury

|  |  |  |
| --- | --- | --- |
| **Metals** | **Melting point 0C** | **Boiling point 0C** |
| Iron | 1535 | 2750 |
| Zinc | 419 | 907 |

\_\_\_25) Room temperature is 250C. Which elements are solids at room temperature?

1. Iron b) zinc C) iron and zinc d) neither one

\_\_\_\_26) At 4500C, which metal would be a liquid?

a) Iron b) zinc C) iron and zinc d) neither one

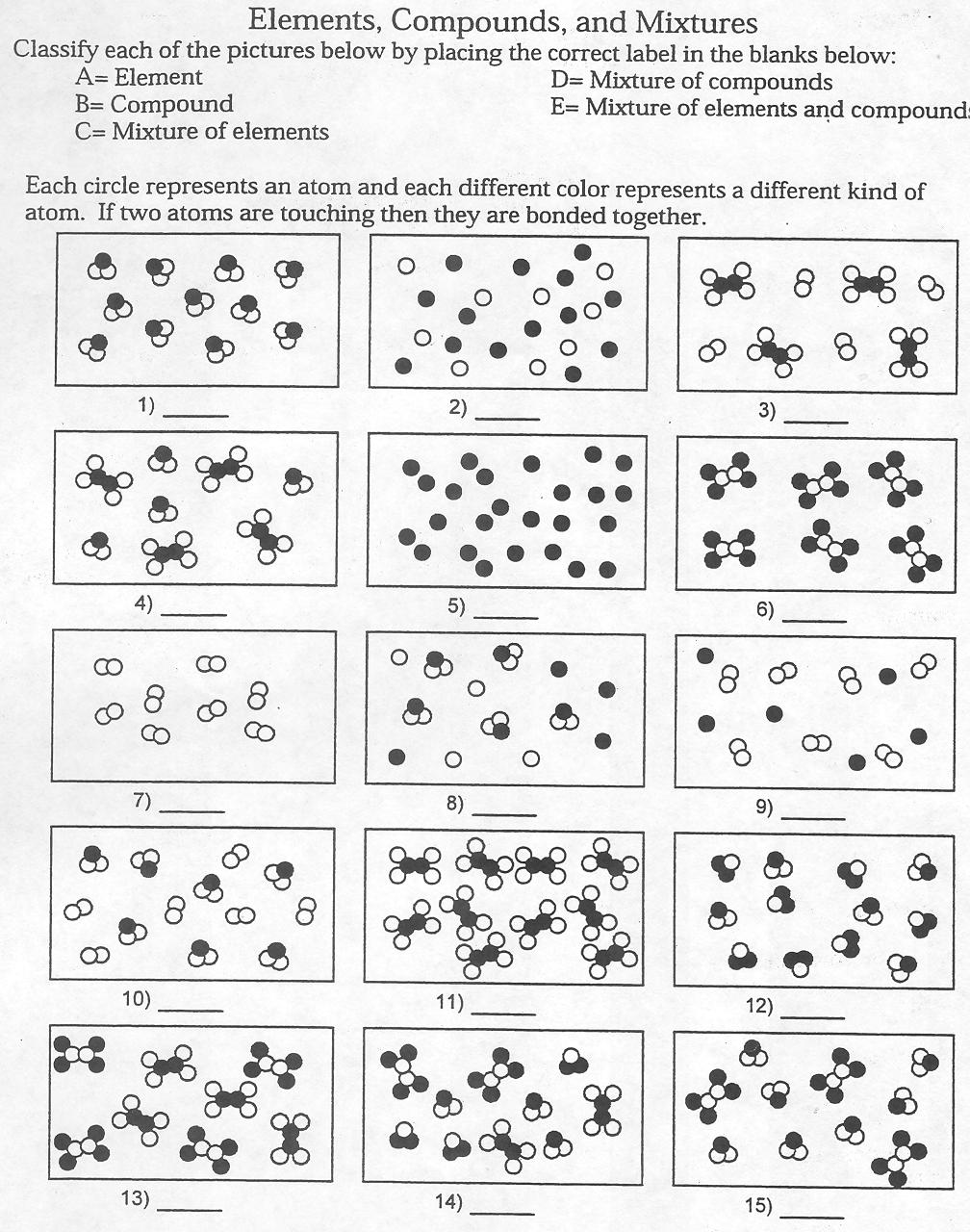
27) The majority of elements on the periodic table are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

28) The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_have properties of metals and nonmetals. Give one example:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

29) Which two elements are in the same family? Oxygen and Selenium OR Magnesium and Sodium OR Copper and Boron

Fill in the chart below with missing information: #26-39

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Element** | **Atomic number** | **Mass # (round to nearest whole number)** | **Protons** | **Electrons** | **neutrons** |
| O | 8 | 16 | #30) | 8 | #31) |
| #28) | 6 | 12 | 6 | #32) | 6 |
| S | 16 | #33) | 16 | 16 | 16 |
| Mg | #34) | 24 | 12 | 12 | #35) |
| #36) | 19 | #37) | 19 | 19 | #38) |

#39- 54 Identify each picture as an element, compound, or mixture.