8th Grade Science Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Redlands Middle School Date\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_ Score\_\_\_\_\_/4

**Al + NaOH →**

**Skill Builder**

1-15 Match the correct term with its definition:

\_\_\_1. Phenolphthalein A. A substance that cannot be broken down – all matter is made up of these

\_\_\_2. Element B. Turns pink when mixed with a base

\_\_\_3. Conductivity C. A test to see if electricity can pass through a material.

\_\_\_4. Molecule D. A substance made of two or more elements

\_\_\_5. Compound E. Two or more atoms bonded together

\_\_\_6. Electron A. The positive particle of an atom.

\_\_\_7. Reactant B. The negative particle of an atom.

\_\_\_8. Exothermic C. A reaction that gives heat to the surrounding air

\_\_\_9. Proton D. The chemicals that are mixed together to cause a reaction.

\_\_\_10. Product E. The chemicals which were made by a reaction

\_\_\_11. Atomic number A. Nothing is gained or lost in a chemical reaction

\_\_\_12. Balanced equation B. The particle of an atom with no charge

\_\_\_13. Neutron C. Based on amount of protons.

\_\_\_14. Plasma D. A material which has tightly packed particles which move slow enough that the material maintains its shape

\_\_\_15. Solid E. A gas energized with charged particles

16. The density at STP was determined for three gases; CO2, O2, and H2. Complete the chart by matching the gas with the

correct density. You can use the atomic mass of each element to help you.

|  |  |
| --- | --- |
| Gas | Density g/L |
| A | 0.08988 |
| B | 1.429 |
| C | 1.96 |

17. The density of air at STP is 1.226 g/L.

Which of the gases tested in question will float if used to inflate a balloon? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18. A molecule of water has two hydrogen atoms and one oxygen atom. How are they held together?

1. H has a positive charge and O has a positive charge and they attract each other.
2. O has a negative charge and H has a negative charge and the attract each other.
3. Oxygen atoms have positive charges and hydrogen has negative and they are attracted to each other.
4. Oxygen atoms have negative charges and hydrogen has positive and they are attracted to each other.

19. Identify two chemical properties of sodium.

A. When combined with water it produces hydrogen gas

B. Is not very reactive.

C. It is malleable

D. It conducts electricity

E. When combined with water it produces a base.

20. What was the product collected in the Al + NaOH (aq) lab?

A. Na

B. O

C. OH

D. H

E. Water

21. Aluminum is classified as a metal because

A. It conducts electricity

B. It has luster.

C. It is a solid at room temperature

D. It is malleable

E. A, B, C, and D.

22. The elements increase by one \_\_\_\_\_ and one electron as you go from left to right on the periodic table.

A. Positron

B. Neutron

C. Megatron

D. Proton

E. Quark

23. Which of the following may be possible products of the reaction of H2O + SO2?

A. H2SO4, HCl, CH4

B. H2SO4, CO2, H2

C. H2SO4, H2, O2

24 – 27 Write “P” if the statement refers to a physical change/property

Write “C” if the statement refers to a chemical change/property

\_\_\_24. Honey slows down when it cools

\_\_\_25. Hydrogen is flammable

\_\_\_26. Water vapor condenses on a mirror

\_\_\_27. Lightening converts O2 to ozone (O3)

28-31 Write “B” if the reaction is balanced as written.

Write “U” if the reaction in NOT balanced as written.

\_\_\_28. 6CO2 + 6H2O → C6H12O6 + 6O2

\_\_\_29. 2Li + H2O → 2LiOH + H2

\_\_\_30. H2O → O2 + H2

\_\_\_31. Zn + HCl → ZnCl2 + H2

\_\_\_32. Atoms of the same element with different numbers of neutrons are called \_\_\_\_.

A. Isotopes

B. Metalloids

C. Metals

D. Radioactive elements