**Chemistry of Matter Assignment – Terms/Definitions/Lab Concepts – Science 9 – Value 55**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: THURSDAY, April 20, 2017**

**DUE: MONDAY, April 24, 2017**

1. **Multiple Choice** – Select one correct response for each of the following. **Value 15**
2. Matter is anything that has \_\_\_\_\_\_\_\_\_\_\_\_\_ and takes up \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. mass, weight
4. mass, space (volume)
5. mass, density
6. Which of the following is not an example of a physical property?
7. Color, shape
8. Density, taste
9. Flammability, reactivity with vinegar or oxygen
10. Identify which of the following is not an example of a chemical property.
11. Zinc reacts with hydrochloric acid and creates hydrogen gas.
12. Nitrogen does not burn.
13. The boiling point of water is one hundred degrees Celsius.
14. The physical property of this substance is that it is malleable and it reacts with oxygen to form rust (iron oxide) is its chemical property. What is the substance?
15. Baking soda
16. Rubbing alcohol
17. Iron
18. A gas can be measured or weighed (as shown in Bill Nye’s video on matter).
19. TRUE
20. FALSE
21. A physical change is a change without a change in \_\_\_\_\_\_\_\_\_\_\_\_\_ composition.
22. chemical
23. multiple
24. physical
25. The three states of matter include:
26. Solid
27. Liquid
28. Gas
29. All of the above.
30. Which of the following statements about a chemical change is FALSE?
31. A change in which a substance becomes another substance having different properties
32. A change that is reversible using ordinary physical means.
33. Changes that usually cause heat, sound, light, odor, fizzing/foaming, and color changes.
34. All of the following are examples of a physical change EXCEPT:
35. The sublimation of carbon dioxide.
36. Crushing an aluminum can.
37. Baking a cake.
38. This state of matter particles are tightly compact and vibrate without the ability to move freely (has definite shape and volume).
39. Liquid
40. Gas
41. Solid
42. This state of matter the particles are tightly compact, but able to move around close to each other (and have no definite shape, but definite volume).
43. Gas
44. Solid
45. Liquid

1. An example of this state of matter include florescent and neon light, lightning, and the aurora borealis.
2. Gas
3. Plasma
4. Bose-Einstein Condensate
5. Density is a measure of the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_ present in a given \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a substance.
6. volume, matter
7. matter, amount
8. matter, volume
9. A solution is a homogeneous mixture of two or more substance. An example would include:
10. Pepper & water
11. Salty water
12. Milk
13. Find the density of a substance with a mass of 28 g and a volume of 4 cm3.
14. D = 1/7 g per cm3
15. D = 7 g per cm3
16. D = 6 g per cm3
17. Identify the following as a *chemical change (C)* or a *physical change (P)*: **Value 8**
18. Bending a fork \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. Burning wood \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. Vinegar and baking soda combining to create salt and water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. Piece of paper is green \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
22. Sulfur smells like rotten eggs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
23. The boiling point of water is water at 100 degrees Celsius \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
24. Iron in the presence of oxygen produces iron oxide or rust \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
25. Cutting up paper into shreds \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
26. Fill in the blanks using the word list below. **Value 12**

*WORD LIST*

suspension weight intrinsic property gas solute

alloy solvent mass mixture energy

Bose-Einstein Condensate 0.75 grams/cm3

1. \_\_\_\_\_\_\_\_\_\_\_ is a measure of how much matter an object is made of and does not change regardless of where something or someone is.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_ is the force of gravity on an object and is equal to the mass of the body time the local acceleration of gravity.
3. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is defined as the combination of more than one type of particle (example, salt water or Kool-Aid).
4. Brass and steel are examples of an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which is a homogeneous mixture of one of more metals or non-metals.
5. Muddy water is an example of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or a mixture where particles will settle out if left alone.
6. This state of matter or \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the particles spread out or move close together with a lot of energy (no definite shape or volume).
7. This state of matter named \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, exist at extremely cold temperatures (around absolute zero or -460 degrees F.
8. The physical states of matter result from the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the particles composing the matter have.
9. Density does not depend on how much of a substance you have (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) – in other words, the density of a gold bar would be the same as the density of a gold flake.
10. Salt is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that dissolves in water, a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. A block of maple has a mass of 20 grams and a volume of 26.5 cm3. The density of the block is equal to \_\_\_\_\_\_\_\_\_\_\_\_.

**ANSWER ALL OF THE SHORT ANSWER QUESTIONS IN FULL SENTENCES**

**IF YOU HAVE READ THESE INSTRUCTIONS PLACE A SMILEY FACE HERE \_\_\_\_\_\_\_\_!**

1. **Short Answer Questions** – **Value 20**
2. The formula to determine density (D) equals mass (g) divided by volume (cm3).
3. What is the formula to determine **mass of a substance**? **Value 2**

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is the formula to determine **volume of a substance**? **Value 2**

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Indicate *two specific examples* of a physical property of water. **Value 2**
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Indicate *two specific examples* of a *chemical change* of an egg. **Value 2**
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Indicate a physical property and a chemical property of the following substances (use the chart in your notes completed during class): **Value 6**
8. Helium

Physical property: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chemical property: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Wood

Physical property: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chemical property: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Rubbing alcohol

Physical property: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chemical property: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. (a) Is a person’s weight is less on the moon? Why? **Value 1**

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) Is the *mass of a person the same* on Earth and the moon? **Value 1**

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. \*What is meant by the *polarity of a substance*? **Value 2**

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. \*A. From the results of the layer of liquids lab, which substance was *most dense*? Why? **Value 1**

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*B. From the results of the layer of liquids lab, which substance was the *least dense*?Why? **Value 1**

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***HAVE A GREAT DAY!!***