Name: _____ Chemical Reactions Unit Test—Study Guide

Vocab- study the Chemical Reactions Vocabulary entry in your binder. You must be able to know what the words on that entry mean and apply that knowledge to answer test questions.

Short Answers- Write your answers in complete sentences.

1. When an object's temperature increases, what happens to the molecules?

_____

_____

_____

2. What are the indicators that a chemical change has occurred?

_____

_____

_____

_____

3. If an object has a volume of 25 mL and a mass of 150 g; what is its density?

_____

_____

4. Think back to the Law of Conservation of Mass/Matter Lab. If matter cannot be destroyed what does happen to it?

_____

_____

_____

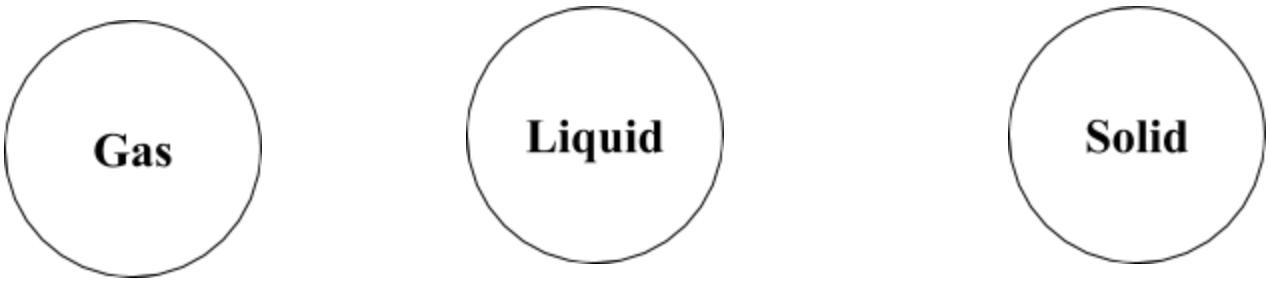
5. What is solubility?

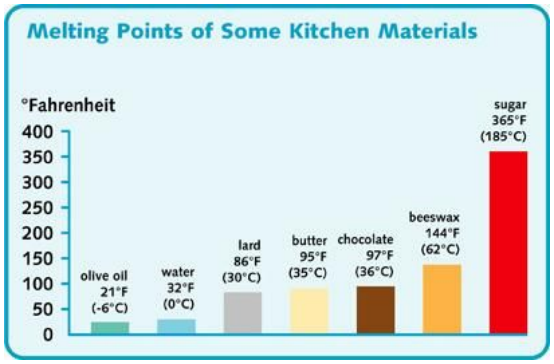
_____

_____

6. Complete the diagram to show how a substance can change between a solid, liquid, and gas. Label your arrows with the words from the bank below.

Word Bank		
Melting	Freezing	Vaporization
Condensation	Deposition	Sublimation





7. Which Comparison is accurate, based on the graph above?

a) Sugar has a lower melting point than lard.
b) Water has a lower melting point than olive oil.
c) Butter has a higher melting point than sugar.
d) Butter has a higher melting point than water.

8. Draw a very simple model of an atom and label the nucleus, protons, neutrons, and electrons.

9. Complete the T-Chart below—focusing on the characteristics of each state of matter.

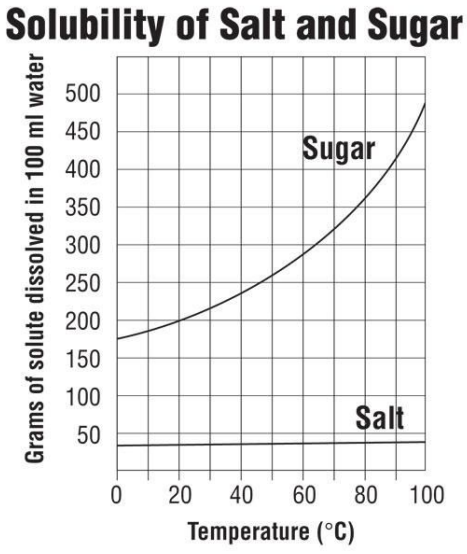
Solid	Liquid	Gas

10. Based on the graph below identify approximately how many grams of salt was dissolved in 100 mL of water at 90 degrees Celsius.

_____

11. Based on the graph below identify approximately how many grams of sugar was dissolved in 100 mL of water at 70 degrees Celsius.

_____



12. The Boiling and Melting Point of Water is a Size Independent property. Explain what this means.

_____

_____

_____

13. Find the density of each block below.

ANSWERS	
F	
G	
H	
J	

F

Mass = 9 grams
Volume = 9 cubic centimeters

H

Mass = 11 grams
Volume = 4 cubic centimeters

G

Mass = 10 grams
Volume = 12 cubic centimeters

J

Mass = 12 grams
Volume = 15 cubic centimeters

14. Which of the blocks above could float in water if water has a density of $1 g/cm^{3?}$ Why?

_____

_____

_____

Physical and Chemical Changes

15. Label each as a Physical **(P)** or Chemical **(C)** Change.

1.		An ice cube is placed in the sun. Later there is a puddle of water. Later still the puddle is gone.
2.		Two chemicals are mixed together and a gas is produced.
3.		A bicycle changes color as it rusts.
4.		A solid is crushed to a powder.
5.		Two substances are mixed and light is produced.
6.		A piece of ice melts and reacts with sodium.
7.		Mixing salt and pepper.
8.		Chocolate syrup is dissolved in milk.
9.		A marshmallow is toasted over a campfire.
10.		A marshmallow is cut in half.

16. Find the mass of the water produced in the chemical reaction below.

Mass of Reactants	**Mass of Products**
Ethane + Oxygen	Carbon Dioxide + Water
75.0 g + 225.0 g	**162.5 g + _____ g**