Front

Matter WS Name:_____Block:_____

1. Define chemistry. study of matter

2. Define matter. has mass & takes up space

3. Draw the arrangement and describe the movement of particles in each state of matter: solid, liquid, gas.

solid

vibrate, shake

Liquid

Flow, slide pasteach other

gas

randomly

4. Name and describe all phase changes among the three states of matter (i.e. melting, solidification, condensation, etc.)

Solid $\xrightarrow{\text{melt}}$ Liquid $\xrightarrow{\text{vaporization}}$ gas

Solid $\xleftarrow{\text{freeze}}$ Liquid $\xleftarrow{\text{condensation}}$ gas

Solid $\xrightarrow{\text{sublimation}}$ gas

5. How are mixtures different from substances?

substances are chemically combined mixtures are physically together (reversable)

6. Identify each of the following as either a mixture or substance.
   a. Carbon dioxide substance
   b. Soil mixture
   c. Raisin bread mixture
   d. H_2O substance
   e. Fe + Zn mixture

7. There are two types of substances: element and compound. What is the difference between the two?

compound are more than 1 atom
elements are 1 atom

8. Identify each of the following as either an element or compound.
   a. Carbon (C) element
   b. Calcium (Ca) element
   c. Glucose (compound
   d. KBr compound
   e. Fe element

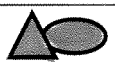
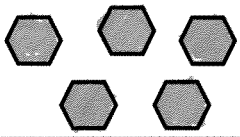
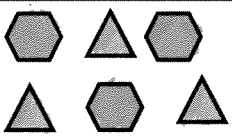
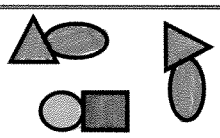
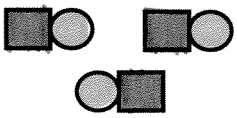
9. There are two types of compounds: ionic and covalent. What types of elements combine to form an ionic bond? What types of elements combine to form a covalent bond?

Ionic is a Metal & Nonmetal
Covalent is 2 Nonmetals

10. Identify each of the following as either a metal or nonmetal.
   a. Aluminum (Al) Metal
   b. Helium (He) NonMetal
   c. Phosphorus (P) NonMetal
   d. Potassium (K) Metal

Back

Use the diagrams and key below to answer Questions 11-13.

Key	Mg	Kr	KCl	MgO 
Answer Choices				
	A	B	C	D

11. Which diagram(s) above represent(s) a pure substance? A & D

12. Which diagram(s) above represent(s) a mixture of elements? B

13. Which diagram(s) above represent(s) a mixture of compounds? C

14. How is a chemical change different from a physical change?

chemical change atoms are rearranging, can not be reversed
physical change can be undone.

15. List four (4) indications of a chemical change.

Energy : Fire, light, electricity, Δ temp
color change : unpredicted
Precipitate: liquid + liquid = solid
Gas Production: bubbles, fizzing, smoke, odor Δ

16. Identify each of the following change as either physical or chemical.

a. Dissolving Kool-Aid powder in water physical
b. Melting of ice physical
c. Fizzing when an Alka-Seltzer tablet is added to water chemical
d. Decomposition of food by stomach acid during digestion chemical
e. Burning of wood at a camp fire chemical

17. What is the difference between a homogeneous mixture and a heterogeneous mixture?

homogeneous is uniform Heterogeneous can see the different parts

18. Identify each of the following mixture as either homogeneous or heterogeneous.

a. Italian dressing Heterogeneous
b. Soda Homogeneous
c. Chocolate chip cookie Heterogeneous

19. Describe the ~~six~~ Four (~~6~~ 4) techniques used in lab to physically separate mixtures.

1. Filter (station 4)
2. Evaporation - crystalization (station 8)
3. Chromatography (Station 6)
4. magnetism (station 7)

20. Describe the one (1) technique used in lab to chemically change a substance.

electrolysis (Battery)

21. Name the lab equipment that you used in lab and describe its function.

1. Scoopula: transfer solids
2. Pipet: transfer liquids
3. graduated cylinder: measure liquids
4. Stirrer
5. test tube:
6. test tube rack
7. erlenmeyer Flask: swirl liquids
8. Beaker
9. Funnel: Filter