Review Worksheet

1. List the 3 subatomic particles; the charge that each has; and the mass of each particle in the space below

Subatomic Particle	Charge	Mass of Particle

2. Complete the following table by filling in the correct information using your periodic table

 # Protons # electrons # neutrons Atomic Mass Atomic # Element Chemical Symbol name

# protons	# electrons	#neutrons	Atomic Mass	Atomic Number	Element Name	Element Symbol
33						
					Silver	
			96			
		47				
				56		
						In
	77					

4. Draw a Bohr Diagram for:

a) Carbon b) Chlorine c) Magnesuim

5. Count the atoms of each element in the following:

Na_2SO_4 $Mg_3(PO_4)_2$ $3Ca(HCO_3)_2$

6. Fill in the Blanks:

Elements that are in a Vertical Column are known as _____ or _____

Elements that are in a Horizontal row are known as _____

The main thing that determines reactivity (how reactive an atom is) has to do with the number of _____ _____

Elements that are listed in different columns on the periodic table react better with other certain elements. Fill-in the correct column number and information in the blanks:

Elements in column _____***one***_____ react vigorously with elements in column _____

Elements in column _____ react well with elements in column _____***six***_____

While elements in column ___***three*** ____ react readily with elements from column _____

The main reason for these elements to react well with each other is because they _____ each other's _____ shell.

7. Matching

Empidocles _____ a) Atoms of one element are the same

Dalton _____ b) Invented Lab tools

Bohr _____ c) Created the Muffin model

Democritus _____ d) The 4 element theory

Aristotle _____ e) All matter has its own atoms

Alchemists _____ f) Rejected the Atomic model

De Lavoisier _____ g) proposed the planetary model

Rutherford _____ h) nucleus is very dense and +ve charged

Thomson _____ i) element is a pure substance

8. Tell whether each of the following are chemical or physical changes (c or p):

a) Crushing stone _____ b) Burning Mg _____ c) Melting Ice _____

d) Rusting iron _____ e) dissolving sugar _____ f) baking muffins _____

g) Heating Sulphur _____ h) melting wax _____ i) frying an egg _____

9. Explain what makes a change chemical or physical in nature. (In other words what needs to happen in order for a change to be physical and what needs to happen in order for a change to be chemical)?

10 . Define the following:

Mixture-

Molecule-

Pure substance –

Atom –

Chemical Formula –

Compound –

Element -

11. Using the definitions above, classify the following: (can use more than one)

Pizza _____	Kool-Aid _____
Salt (NaCl) _____	Water _____
Iron _____	Plastic fork _____
Aluminum fork _____	CaOH _____
Garbage _____	Coffee _____
Slurpee _____	50 Ca atoms _____
Steel _____	Solid Oak _____

12. ***Matter*** is anything that has _____.

13. Who came up with the "***Four Element Theory***" of matter? _____

14. The elements in the ***Four Element Theory*** are:

a. _____	b. _____
c. _____	d. _____

15. Using wood as an example, explain how wood could contain the above four elements.

16. Another Greek philosopher, ***Democritus,*** came up with a different idea of what matter is made of. Briefly explain his theory.

17. Why was Democritus' idea of matter not accepted? (Hint: there were 2 people involved)

18. What is ***transmutation***? Who came up with this idea?

19. The ***Alchemists*** were the first real chemists. What three things were they trying to discover?

    a. _____

    b. _____

    c. _____

20. The ***Alchemists*** never discovered any of the above, so why are they important? (give 2 reasons)

    a. _____

    b. _____

21. ***How did Joseph Preistly*** *and* ***Antone Lavoisier*** defeat the ***Four Element Theory***?

22. What is the **difference** between an ***atom*** and an ***element***?

23. Use the Four Element Theory to explain what makes substances different from one-another. (ie. What makes wood different from say, gold.)

24. Fill in the table with respect to the models of the atom.

Model	Scientist	Main Points	Diagram
Billiard Ball			
Blueberry Muffin			
Nuclear			
Planetary			

25. Fill in the table with respect to the different families on the periodic table.

Column Number	Family Name	Number of Valence Electrons	Reactivity? (Very, Fairly, Not at all)
I (1)			
II (2)			
VI (6)			
VII (7)			
VIII (8)			

26. How does the reactivity of a family relate to the number of valence electrons?