NAME_____ DATE_____ PERIOD_____

Chemistry Unit Review Sheet

Write the name each symbol represents in the blank beside it.

1. K _____
2. Mg _____
3. Cu _____
4. Ag _____
5. Na _____
6. Br _____
7. Cl _____
8. P _____
9. Fe _____
10. H _____

Read each situation below and determine if it is discussing a chemical change =C or a physical change= P

____ 11. Baking soda and vinegar react. Gas bubbles are produced
____ 12. Steam condenses on the side of a glass that contains a hot liquid
____ 13. Hydrochloric acid and sodium hydroxide react and form sodium chloride and water
____ 14. Burning a piece of paper
____ 15. You calculate the density of gold after finding its mass and volume

Read the descriptions below and determine whether each item describes an endothermic or an exothermic reaction.

_____ 16. A reaction that produces heat energy
_____ 17. A reaction that absorbs energy
_____ 18. Paper burns
_____ 19. Magnesium and Hydrogen peroxide react and the temperature increases by 12°C
_____ 20. Alka seltzer reacts with water and the temperature drops by 9°C

Fill in the chart below. M=metal, NM= nonmetal, ML=Metalloid.

Symbol	Name	Atomic #	Atomic Mass	# of Protons	# of electrons	# of neutrons	M, NM, ML
Fe			55.847		26		M
Sb	Antimony			51		71	
	Chlorine	17			17		NM
Ni	Nickel		58.69		28	31	
W	Tungsten	74		74			M

What family does each element above belong in and properties of that family?

Fe-
Sb-
Cl-
Ni-
W-

NAME_____ DATE_____ PERIOD_____

Determine whether the equations below are balanced or unbalanced.

21) $H_2 + O_2 \rightarrow H_2O_2$ _____

22) $Ag + O_2 \rightarrow Ag_2O_2$ _____

23) $CdCO_3 \rightarrow CdO + CO_2$ _____

24) $KI + H_2O_2 \rightarrow KOH + I_2$ _____

Read the descriptions below and classify each element, family, or family member as a metal, nonmetal, or metalloid.

25) Sodium _____
26) Stair step on the periodic table _____
27) Are ductile and malleable _____
28) Can have either a shiny or a dull appearance _____
29) Have low densities _____
30) Good conductors of heat and electricity _____

Examine the reaction below, then answer the questions or label the equation.

$NaOH + HCl \rightarrow NaCl + H_2O$ + heat released

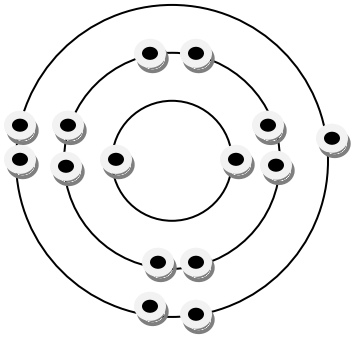
31) Does this equation support the Law of Conservation of Matter? Why.

32) Label the reactant side and the product side of the reaction

33) Is this reaction exothermic or endothermic and how do you know?

Identify the following element and explain how many sub atomic particles:

34)



Write the vocabulary word that matches and give a <u>real life example</u> for each.

35. The amount of a substance in a given area is knows as its
36. You increase this when you add more molecules of a chemical inside a set space
37. These chemicals speed up reactions without altering the products
38. These chemicals slow down a reaction without altering the products
39. This law states that **Matter is can not be created nor destroyed only changes forms**?
40. The part of a mixture that dissolves is called the _____?
41. Part of a mixture that does the dissolving?

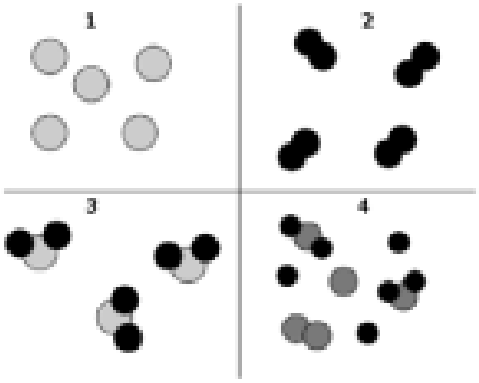
NAME_____ DATE_____ PERIOD_____

42. The combination of the solvent and solute is called the _____?

43. The type of mixture that all material is evenly distributed throughout is a _____mixture?

44. The type of mixture that all material is not evenly distributed throughout is a _____ mixture?

Use the below image to answer the questions



45. What number(s) represents a compound of the same element?

45. What number(s) represents a mixture?

47. What number(s) represents a compound?

48. What number(s) represents elements?

49. What purpose did the liver serve in the Decomposition of H_2O_2 lab? Did the liver decompose?

50. Explain where all subatomic particles of an atom of Arsenic (As) are located. Do not draw a diagram but use complete sentences.

51. Why are the halogens and alkali metals a "perfect match" to bond?

52. Nuts, bolts, and washers were used as a metaphor to introduce the classifications of matter. Explain the metaphor in scientific terms. Use element, compound, and mixture in your answer.

53. In an experiment on chemical reactions you used cabbage juice as a PH indicator, baking soda and vinegar in a Ziploc baggie or a closed system. The total mass of the reactants was 175 grams and the total mass of the products was 175 grams. You repeat the experiment in an open beaker. Describe the results. Use scientific principles learned during the unit to justify your answer.

54. You are trying to find the density of a liquid. The liquid has a volume 8ml and the graduated cylinder the liquid is in has a mass of 24 grams when empty. The total mass including the liquid is 40 g. What is the density of the liquid?

55. A toy dinosaur has a mass of 70 grams. Because of its shape the water displacement method was used to find its volume. When it submerged, the volume was found to be 15 ml. Calculate its density.

56. A box has a length of 4 cm, width of 5 cm and height of 10 cm. The mass of the box is 80 g. What is the box's density?

NAME_____ DATE_____ PERIOD_____

57. What would happen to an atom if it gained or lost an electron?

58. What would happen to an atom if it gained or lost a neutron?

59. Explain the difference between heterogeneous and homogeneous mixtures.

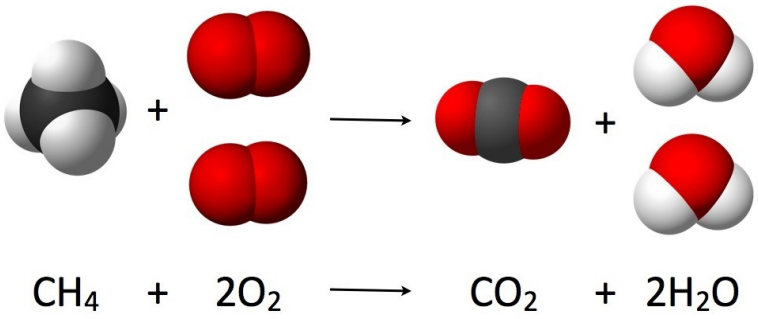
60. Explain how reactive each family is on the periodic table.

61. What is the difference between a physical and chemical change.

62. Know valence electrons and why they are important. (Octet rule)

63. Be able to draw and label a Bohr Diagram and Lewis Structure. With specific attention to protons, neutrons, and electrons and their charges/location.

64. Explain this picture:



$CH_4 + 2O_2 \longrightarrow CO_2 + 2H_2O$

65. Explain this picture: