CHM 1025C
Chapter Test \#4
Ch 8 \& 9
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NO CREDIT IF YOU: Fail to put in the Units \& Properly Round, Fail to show ALL math work ( 1 pt ) PRINT YOUR NAME on the line:

Your start time on this test
Your finish time on this test:
Max Grade: 100 points
Time it took you to do this test:

## A. Fill in the Blanks ( 28 pts total, 4 points ea)

1. Why is the atomic weight of an element sometimes called the average atomic weight?
2. What is a mole?
3. Which contains more atoms: 1 mole of Lead or 12.01 g of Carbon?
4. What is the Molar Mass of Water?
5. What is Avogadro's Number [ what is the value and what does that mean ]?
6. What is the purpose of determining Percent Composition?
7. What does Theoretical Yield mean?

# B. Solve the Following. Show the Complete and Balanced Equation for each reaction And - Will the reaction go to Completion? (70 pts total, 10 points ea) <br> B-1 What is the molecular and what is the empirical formulae for a compound that contains $\mathbf{5 9 . 9 5 \%}$ Carbon and $\mathbf{1 3 . 4 2 \%}$ Hydrogen? The estimated Mw is between 175 - $\mathbf{1 8 5} \mathrm{g} / \mathrm{mole}$. 

B-2 What is the empirical formulae for a compound that contains $\mathbf{5 2 . 0 0 \%}$ Aluminum?

B-3 Ammonium Chloride is reacted with Sulfuric Acid. What is the driving force for this reaction? Show all equations.

B-4-6 5.00 g of Magnesium is reacted with 3.00 g of Hydrochloric Acid.
B-4 Show the Complete Balanced Formulae
B-5 How much "Product" [ what is the driving force ] is formed
B-6 How much excess is there of the one reactant in excess?

B-7 10.0 g of Silver Nitrate is reacted with 10.0 g of Potassium Chloride to produce 2.0 g of a precipitate. What is the Percent Yield for this reaction?

## DID YOU CHECK FOR SIGNIFICANT DIGITS DID YOU CHECK FOR PROPER UNITS

$\qquad$ Yes $\qquad$ No

## How do you rate this test from 1 to 10

$\qquad$ Yes $\qquad$ No

1 = Very Easy, can do it with my eyes closed, $10=$ Very Very Difficult, could not do any of the problems

| 1 | $\begin{gathered} 1 \\ \mathbf{H} \\ 1.008 \end{gathered}$ | $2 \mathrm{~A}$ |  |  |  |  |  |  |  |  |  |  | 3A | 4A | 5A | 6A | $7{ }^{\dagger}$ | $\begin{gathered} 2 \\ \mathrm{He} \\ 4.003 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \\ \hline 2 \\ 2 \mathbf{L i} \\ 6.941 \end{gathered}$ | $\begin{gathered} 4 \\ \mathbf{B e} \\ 9.012 \end{gathered}$ |  |  |  |  |  |  |  |  |  |  | $\begin{array}{\|c\|} \hline 5 \\ \mathbf{B} \\ 10.81 \end{array}$ | $\begin{gathered} 6 \\ C \\ 12.01 \end{gathered}$ | $\begin{gathered} \mathbf{7} \\ \mathbf{N} \\ 14.01 \end{gathered}$ | $\begin{array}{\|c} \hline 8 \\ 0 \\ 16.00 \end{array}$ | $\begin{gathered} 9 \\ \mathbf{F} \\ 19.00 \end{gathered}$ | 10 Ne 20.18 |
|  | $\begin{gathered} 11 \\ \mathbf{N a} \\ 22.99 \end{gathered}$ | $\begin{gathered} 12 \\ \mathbf{M g} \\ 24.31 \end{gathered}$ |  |  |  |  |  |  |  |  |  |  | $\begin{gathered} 13 \\ \mathbf{A l} \\ 26.98 \end{gathered}$ | 14 <br> $\mathbf{S i}$ <br> 28.09 | $\begin{gathered} 15 \\ \mathbf{P} \\ 30.97 \end{gathered}$ | $\begin{gathered} 16 \\ \mathbf{S} \\ 32.07 \end{gathered}$ | $\begin{gathered} 17 \\ \mathbf{C l} \\ 35.45 \end{gathered}$ | $\begin{gathered} 18 \\ \mathbf{A r} \\ 39.95 \end{gathered}$ |
|  | $\begin{gathered} \\ 4 \\ \mathbf{1 9} \\ \mathbf{K} \\ 39.10 \end{gathered}$ | $\begin{gathered} 20 \\ \mathbf{C a} \\ 40.08 \end{gathered}$ | $\begin{gathered} 21 \\ \mathbf{S c} \\ 44.96 \end{gathered}$ | $\begin{gathered} 22 \\ \mathbf{T i} \\ 47.88 \end{gathered}$ | $\begin{gathered} 23 \\ \mathbf{v} \\ 50.94 \end{gathered}$ | $\begin{gathered} 24 \\ \mathbf{C r} \\ 52.00 \end{gathered}$ | $\begin{gathered} 25 \\ \mathbf{M n} \\ 54.94 \end{gathered}$ | $\begin{gathered} 26 \\ \mathbf{F e} \\ 55.85 \end{gathered}$ | $\begin{gathered} 27 \\ \text { Co } \\ 58.93 \end{gathered}$ | $\begin{gathered} 28 \\ \mathbf{N i} \\ 58.69 \end{gathered}$ | $\begin{gathered} 29 \\ \mathbf{C u} \\ 63.55 \end{gathered}$ | $\begin{gathered} 30 \\ \mathbf{Z n} \\ 65.38 \end{gathered}$ | $\begin{gathered} 31 \\ \mathbf{G a} \\ 69.72 \end{gathered}$ | 32 <br> $\mathbf{G e}$ <br> 72.59 | 33 As 74.92 | 34 Se 78.96 | $\begin{gathered} 35 \\ \mathbf{B r} \\ 79.90 \end{gathered}$ | 36 $\mathbf{K r}$ 83.80 |
| 5 | $5 \begin{gathered} 37 \\ \mathbf{R b} \\ 85.47 \end{gathered}$ | $\begin{gathered} 38 \\ \mathbf{S r} \\ 87.62 \end{gathered}$ | $\begin{gathered} 39 \\ \mathbf{Y} \\ 88.91 \end{gathered}$ | $\begin{gathered} 40 \\ \mathbf{Z r} \\ 91.22 \end{gathered}$ | $\begin{gathered} 41 \\ \mathbf{N b} \\ 92.91 \end{gathered}$ | $\begin{gathered} 42 \\ \text { Mo } \\ 95.94 \end{gathered}$ | $\begin{array}{r} 43 \\ \mathbf{T c} \\ (98) \end{array}$ | $\begin{gathered} 44 \\ \mathbf{R u} \\ 101.1 \end{gathered}$ | $\begin{gathered} 45 \\ \mathbf{R h} \\ 102.9 \end{gathered}$ | $\begin{gathered} 46 \\ \text { Pd } \\ 106.4 \end{gathered}$ | $\begin{gathered} 47 \\ \mathbf{A g} \\ 107.9 \end{gathered}$ | $\begin{gathered} 48 \\ \mathbf{C d} \\ 112.4 \end{gathered}$ | $\begin{gathered} 49 \\ \text { In } \\ 114.8 \end{gathered}$ | $\begin{gathered} 50 \\ \text { Sn } \\ 118.7 \end{gathered}$ | 51 <br> $\mathbf{S b}$ <br> 121.8 | $\begin{array}{r} 52 \\ \mathrm{Te} \\ 127.6 \\ \hline \end{array}$ | $\begin{gathered} 53 \\ \text { I } \\ 126.9 \end{gathered}$ | $\begin{gathered} 54 \\ \mathbf{X e} \\ 131.3 \end{gathered}$ |
| 6 | $\begin{gathered} 55 \\ \text { Cs } \\ 132.9 \end{gathered}$ | $\begin{gathered} 56 \\ \mathbf{B a} \\ 137.3 \end{gathered}$ | $\begin{gathered} 57 \\ \mathbf{L a} \mathbf{a}^{*} \\ 138.9 \end{gathered}$ | $\begin{gathered} 72 \\ \text { Hf } \\ 178.5 \end{gathered}$ | $\begin{gathered} 73 \\ \mathbf{T a} \\ 180.9 \end{gathered}$ | $\begin{gathered} 74 \\ \mathbf{W} \\ 183.9 \end{gathered}$ | $\begin{gathered} 75 \\ \mathbf{R e} \\ 186.2 \end{gathered}$ | $\begin{gathered} 76 \\ \text { Os } \\ 190.2 \end{gathered}$ | $\begin{gathered} 77 \\ \mathbf{I r} \\ 192.2 \end{gathered}$ | $\begin{gathered} 78 \\ \mathbf{P t} \\ 195.1 \end{gathered}$ | $\begin{gathered} 79 \\ \mathbf{A u} \\ 197.0 \end{gathered}$ | $\begin{gathered} 80 \\ \mathbf{H g} \\ 200.6 \end{gathered}$ | $\begin{gathered} 81 \\ \text { T1 } \\ 204.4 \end{gathered}$ | $\begin{gathered} 82 \\ \mathbf{P b} \\ 207.2 \end{gathered}$ | $\begin{gathered} 83 \\ \mathbf{B i} \\ 209.0 \end{gathered}$ | 84 <br> Po <br> $(209)$ | $\begin{gathered} 85 \\ \text { At } \\ (210) \end{gathered}$ | $\begin{gathered} 86 \\ \mathbf{R n} \\ (222) \end{gathered}$ |
| 7 | $7 \begin{gathered} 87 \\ \mathbf{F r} \\ (223) \end{gathered}$ | $\begin{array}{r} 88 \\ \mathbf{R a} \\ 226 \\ \hline \end{array}$ | $\begin{gathered} 89 \\ \mathbf{A c}^{* *} \\ (227) \\ \hline \end{gathered}$ | $\begin{gathered} 104 \\ \mathbf{R f} \\ (261) \end{gathered}$ | $\begin{gathered} 105 \\ \mathbf{D b} \\ (262) \end{gathered}$ | $\begin{gathered} 106 \\ \mathbf{S g} \\ (263) \end{gathered}$ | $\begin{gathered} 107 \\ \mathbf{B h} \\ (264) \end{gathered}$ | $\begin{gathered} 108 \\ \text { Hs } \\ (265) \\ \hline \end{gathered}$ | $\begin{gathered} 109 \\ \mathbf{M t} \\ (268) \end{gathered}$ | $\begin{gathered} 110 \\ \text { Ds } \\ (271) \end{gathered}$ | $\begin{gathered} 111 \\ \mathbf{R g} \\ (272) \end{gathered}$ | $\begin{gathered} 112 \\ \mathbf{U u b} \end{gathered}$ | $\begin{aligned} & 113 \\ & \text { Uut } \end{aligned}$ | $\begin{gathered} 114 \\ \text { Uuq } \end{gathered}$ | $\begin{gathered} 115 \\ \text { Uup } \end{gathered}$ |  |  |  |

