EXERCISE 9
Chem 10
(Due in lab _____)
10 points

Name KEY
(last) (first)

Lab Section #_____ Lab Instructor _____

A. For each of the following reactions, write a "B" if the equation is balanced and a "U" if the equation is unbalanced.

1. $Hg(NO_3)_2 \longrightarrow Hg(NO_2)_2 + O_2$ — 1. B
2. $Ca_3(PO_4)_2 + 3\ NaOH \longrightarrow Na_3PO_4 + 3\ Ca(OH)_2$ — 2. U
3. $MgO + H_2O \longrightarrow Mg(OH)_2$ — 3. B
4. $H_2CO_3 + 2\ NaOH \longrightarrow Na_2CO_3 + 2\ H_2O$ — 4. B
5. $K_2S + Pb(NO_3)_2 \longrightarrow PbS + KNO_3$ — 5. U
6. $C_4H_{10} + 13\ O_2 \longrightarrow 4\ CO_2 + 5\ H_2O$ — 6. U

B. Reaction Type: Write the correct *letter* in the blank at the right.

(A) Combination (B) Single Replacement (C) Decomposition (D) Double Replacement

1. $Ba(NO_3)_2 + Na_2SO_4 \longrightarrow BaSO_4 + 2\ NaNO_3$ — 1. D
2. $P_2O_5 + 3\ H_2O \longrightarrow 2\ H_3PO_4$ — 2. A
3. $Cu + 2\ AgNO_3 \longrightarrow Cu(NO_3)_2 + 2\ Ag$ — 3. B
4. $NH_4Cl \longrightarrow HCl + NH_3$ — 4. C
5. $N_2 + 3\ H_2 \longrightarrow 2\ NH_3$ — 5. A
6. $HCl + NaOH \longrightarrow NaCl + H_2O$ — 6. D
7. $2\ PI_3 \longrightarrow 2\ P + 3\ I_2$ — 7. C
8. $2\ Al + 6\ HNO_3 \longrightarrow 2\ Al(NO_3)_3 + 3\ H_2$ — 8. B
9. $NH_4Br + KC_2H_3O_2 \longrightarrow NH_4C_2H_3O_2 + KBr$ — 9. D
10. $Cu(OH)_2 \longrightarrow CuO + H_2O$ — 10. C
11. $BaO + CO_2 \longrightarrow BaCO_3$ — 11. A
12. $Cl_2 + 2\ KBr \longrightarrow 2\ KCl + Br_2$ — 12. B

(OVER)

C. For each of the following DOUBLE REPLACEMENT reactions, ***circle*** the **PRODUCT** which causes the reaction to occur (go to completion). Then write the correct letter that corresponds to the product you circled in the blank at the right - that is - choose from the following:

(A) weak acid	**(D) insoluble gas**
(B) weak base	**(E) water**
(C) insoluble salt (precipitate)	**(F) no reaction**

EXAMPLE: $2\,AgNO_3 + MgCl_2 \longrightarrow 2(AgCl) + Mg(NO_3)_2$ ____C____

1. $Fe_2(SO_4)_3 + 3\,K_2C_2O_4 \longrightarrow (Fe_2(C_2O_4)_3) + 3\,K_2SO_4$ 1. ____C____

2. $H_2SO_4 + 2\,NaOH \longrightarrow Na_2SO_4 + 2(H_2O)$ 2. ____E____

3. $(NH_4)_2S + 2\,HNO_3 \longrightarrow (H_2S(g)) + 2\,NH_4NO_3$ 3. ____D____

4. $3\,K_2CO_3 + 2\,Li_3PO_4 \longrightarrow 2\,K_3PO_4 + 3\,Li_2CO_3$ 4. ____F____

5. $Pb(NO_3)_2 + 2\,NaCl \longrightarrow (PbCl_2) + 2\,NaNO_3$ 5. ____C____

6. $KC_2H_3O_2 + HCl \longrightarrow (HC_2H_3O_2) + KCl$ 6. ____A____