CHEMISTRY 235 EXPERIMENT 7
QUALITATIVE ANALYSIS

METHOD AND RESULTS

You are given eight compounds containing FOUR of the anions HCO_3^-, CO_3^{2-}, CH_3COO^-, $HCOO^-$, $(COO)_2^{2-}$, I^-, Br^-, and Cl^-. Identify the anion present in each case. Write equations wherever appropriate in the deduction column. In a number of cases gases are evolved. **You should carry out tests on these gases to identify them.**

COMPOUND A

TEST	OBSERVATIONS	DEDUCTIONS
1. Add dil. HCl or dil.H_2SO_4 to the solid.		
2. Make a soln. of A and use it for the following tests.		
a) Add $BaCl_2$(aq) or $Ba(NO_3)_2$(aq) then dil. HCl or dil. HNO_3		
b) Add $MgSO_4$(aq)		

FBB NASC 4/10/91 C235 P5 V.1.0 2hr.

COMPOUND B

TEST	OBSERVATIONS	DEDUCTIONS
1. Heat some of solid B		
2. Add dil. HCl or dil. H_2SO_4 to solid B		
3. Prepare a soln. of B and use it for the following tests.		
a) Add $BaCl_2(aq)$ or $Ba(NO_3)_2(aq)$ then dil. HCl or dil. HNO_3.		
b) Add $MgSO_4(aq)$ and heat.		

COMPOUND C

TEST	OBSERVATIONS	DEDUCTIONS
1. Heat some solid C.		
2. Add dil. HCl or dil. H_2SO_4 to solid C. Warm.		
3. Add a few drops of conc. H_2SO_4 to solid C. Warm.		
4. Make a soln. of C and use it for the following tests.		
a) Add 1 cm^3 conc. H_2SO_4 and 2 cm^3 C_2H_5OH. Warm. Pour into cold water in a beaker.		
b) Add *neutral*[1] $FeCl_3$(aq) then dil. HCl.		
c) Add $AgNO_3$(aq) and leave to stand for a few minutes.		

COMPOUND D

TEST	OBSERVATIONS	DEDUCTIONS
1. Add dil. HCl or dil. H_2SO_4 to some solid D. Warm.		
2. Add a few drops conc. H_2SO_4 to solid D. Warm.		
3. Make a soln. of D and use it for the following tests.		
a) Add 1 cm^3 conc. H_2SO_4 and 2 cm^3 C_2H_5OH. Warm and pour into a beaker of water.		
b) Add *neutral*[1] $FeCl_3(aq)$ then dil. HCl.		

[1] Test the $FeCl_3(aq)$ with litmus. If it is acidic, add dil. $NH_3(aq)$ dropwise until a very faint precipitate appears. If you overshoot add $FeCl_3(aq)$ dropwise until the cloudiness has nearly disappeared.