CHEMISTRY 235 EXPERIMENT 6
QUALITATIVE ANALYSIS

METHOD AND RESULTS

You are provided with three salts containing the cations Zn^{2+}, Mg^{2+}, NH_4^+. Identify the cation present in each salt by performing the following tests. *Make sure you carry out confirmatory tests on any gases evolved.* Write your deductions and equations (where appropriate) in the deduction columns.

COMPOUND A

TEST	OBSERVATIONS	DEDUCTIONS
a) Perform a flame test on A. Use a fresh portion for each test unless otherwise instructed.		
Prepare an aqueous solution of A and use it for the following tests.		
a) Add NaOH(aq) until in excess.		
b) Add NH_3(aq) until in excess.		
c) Add Na_2CO_3(aq) then dil. HCl or dil. HNO_3.		
d) i) Add NH_4Cl(aq) then NH_3(aq) then Na_3PO_4(aq). ii) Add dil. HCl or HNO_3 to the ppt. from (i).		
e) Add $Na_2(COO)_2$(aq).		

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TEST	OBSERVATIONS	DEDUCTIONS
f) Add K_2CrO_4(aq).		
g) Add H_2S soln.		

COMPOUND B

TEST	OBSERVATIONS	DEDUCTIONS
Make a solution of B and use it for the following tests. Use a fresh portion for each test unless otherwise instructed.		
a) Perform a flame test on B.		
b) Add NaOH(aq) until in excess.		
c) Add NH_3(aq) until in excess.		
d) Add H_2S soln. then dil. HCl.		
e) Add $K_4Fe(CN)_6$(aq) then NH_3(aq).		
f) Add $K_3Fe(CN)_6$(aq) then NH_3(aq).		

COMPOUND C

TEST	OBSERVATIONS	DEDUCTIONS
a) Heat a small portion of C in a test tube.		
b) Add NaOH(aq) to a soln. of C and warm.		