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EASTERN UNIVERSITY, SRI LANKA
FIRST YEAR FIRST SEMESTER EXAMINATION IN SCIENCE-2012/2013
(Feb' 2014)
CH 151 QUANTITATIVE AND QUALITATIVE INORGANIC ANALYSES

Time: Three Hours **Group 1**

1. You are provided with a mixture **A** containing two inorganic cations. Analyse the mixture **A** qualitatively and record your observations, inferences and conclusion. Carryout one confirmatory test for each identified cation.

Hint: Assume the cations are present in Group II and Group IV only.

2. A mixture **B** contains two inorganic anions. Perform the following tests and record your observations, inferences and conclusion. Carryout one confirmatory test for each identified anion.

- a) Add dil. H_2SO_4 , warm and test for evolved gas
- b) Prepare Na_2CO_3 extract and use the extract to the following experiments.
 - i. Add dil. HNO_3 and AgNO_3
 - ii. Add dil. HNO_3 and BaCl_2
 - iii. Add dil. HCl and H_2S
 - iv. Boil with few drops of con. HCl and pass H_2S
 - v. Add few drops of NaOH to the extract and then test with fresh dil. Sodium nitroprusside.
 - vi. Boil with con. HNO_3 and ammonium molybdate
 - vii. Acidify the Na_2CO_3 extract with dil. H_2SO_4 and add freshly prepared FeSO_4 and few drops of con. H_2SO_4 .

3. Perform the following experiment and answer the given questions below.

Pipette out 25.0 ml of given oxalic acid solution into a titration flask, add 25 ml of dil. H_2SO_4 . Then add the permanganate solution from the burette until the color is produced faintly pink. (**Take three readings**)

- a) Tabulate your readings.
- b) Write balanced equations for all the reactions involved in this experiment.
- c) Calculate the strength of Potassium permanganate from your readings.