EASTERN UNIVERSITY, SRI LANKA

FIRST YEAR FIRST SEMESTER EXAMINATION IN SCIENCE-2016/2017

(SEPTEMBER' 2018)

CH 1021-QUANTITATIVE AND QUALITATIVE INORGANIC ANALYSES

Group I

Answer all questions **Time: Three hours**

1. A mixture **A** contains four (04) 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* an aqueous solution of the given sample and *perform* the following experiments.

      i) Add dil. HNO_3 and $AgNO_3$

      ii) Add dil. HNO_3 and $BaCl_2$

      iii) Add dil H_2SO_4 and test the evolved gas with filter paper soaked in Lead acetate.

      iv) Add $CaCl_2$ and acetic acid to the solution .

      v) Acidify with dil. H_2SO_4 and add freshly prepared $FeSO_4$ and few drops of con. H_2SO_4

      vi) Add conc.HNO_3 and excess of Ammonium molybdate and boil.

Contd...

2. *Perform* the following experiments and *answer* the given questions below.

a) Pipette out 15.0 ml of given Borax solution into a titration flask, add Methyl red (02 drops) as an indicator and titrate against given HCl (0.1 M), until the solution become faintly red. **(Take three readings)**

i) *Tabulate* your readings.

ii) *Write* balanced equations for all the reactions involved in this experiment.

iii) *Calculate* the strength of Borax from your readings.

b) Pipette out 15.0 ml of standardised Borax solution into a titration flask and neutralize by adding appropriate amount of HCl (obtained from question 2 a) and add 0.5 g of Mannitol. *Titrate* against NaOH using phenolphthalein as an indicator. **(Take three readings)**

i) *Tabulate* your readings.

ii) *Write* balanced equations for all the reactions involved in this experiment.

iii) *Calculate* the strength of NaOH from your readings.

iv) *Write* the role of Mannitol in this titration.

****