# EASTERN UNIVERSITY, SRI LANKA

## FIRST YEAR FIRST SEMESTER EXAMINATION IN SCIENCE-2015/2016

## (SEPTEMBER' 2018)-REPEAT

## CH 151-QUANTITATIVE AND QUALITATIVE INORGANIC ANALYSES

## [OLD SYLLABUS]

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**Answer All Questions** **Time: Three Hours**

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

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* 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. $H_2SO_4$.

3. You are provided with the following solutions.

a) An aqueous solution of **X** of 0.01 M HCl.

b) An aqueous solution of **Y** containing 0.5 g mixture of $Na_2CO_3$ and NaOH in one litre.

Pipette 10.0 ml solution **Y** into a titration flask and titrate it against standard solution **X** using methyl red as an indicator **(take three readings)**.

Pipette 10.0 ml solution **Y** into a titration flask and titrate it against standard solution **X** using phenolphthalein as an indicator **(take three readings)**.

i) *Tabulate* your readings.

ii) *Calculate* the weight of NaOH and $Na_2CO_3$ in the mixture.

iii) *Calculate* the percentage composition of NaOH and $Na_2CO_3$ in the mixture.

**End of paper**