RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

B.A./B.SC. THIRD SEMESTER EXAMINATION, DECEMBER 2013

SECOND YEAR

Date : 20/12/2013 **CHEMISTRY (General)**

Time : 11 am – 1 pm Paper : III Full Marks : 25

[*Answer* ***one*** *question from each unit***]**

Unit - I

1. a) Discuss a comparative study of N, P, As, Sb and Bi with special reference of their—
   i) hydrides and
   ii) chlorides [3+3]
   b) Melting point of AlF_3 is greater than that of $AlCl_3$. Explain. [2]
   c) H_3PO_2 is a monobasic acid — Explain. [3]
   d) $SnCl_2$ is electrovalent and $SnCl_4$ is covalent. Comment on. [2]

2. a) Give a comparative account of carbon and silicon with respect to their—
   i) chlorides and
   ii) oxides [2+2]
   b) What is inorganic benzene? Draw a comparison between inorganic benzene and benzene. [4]
   c) What happens when $NaBiO_3$ is added to an aqueous HNO_3 solution of $MnSO_4$? [2]
   d) Comment on the oxidation state of $T\ell$ in $T\ell I_3$. [3]

Unit - II

3. a) Discuss a comparative study of S, Se and Te with special reference of their—
   i) oxides and
   ii) fluorides [2·5+2·5]
   b) Arrange (in order of increasing) and explain the acidity of the following oxyacids.
   HOCl, $HClO_4$, $HClO_2$ and $HClO_3$ [3]
   c) Explain the oxidising property of $KBrO_3$ with a suitable reaction. [2]
   d) Why the electron affinity of chlorine is greater than that of fluorine? [2]

4. a) NaOH and ClOH ionize differently in aqueous solution. Explain. [2]
   b) Why sulphuric acid and telluric acid are differently formulated? [3]
   c) CO_2 is gaseous but SiO_2 is a high melting solid —Explain. [2]
   d) Write down the oxidising property of $KH(IO_3)_2$ with the help of a reaction. [2]
   e) What do you mean by polyhalides? Write down the preparation of polyhalides and stability of the polyhalide ions. [3]