

Day : Monday
Date : 13/11/2017

W-2017-3790

Time: 02.00 PM TO 05.00 PM
Max. Marks: 60.

N.B.:

- 1) Q. No. 1 and Q. No. 5 are **COMPULSORY**, out of remaining attempt any **TWO** questions from Section-I and any **TWO** questions from Section-II.
- 2) Both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the **RIGHT** indicate full marks.

SECTION-I

- Q.1** Attempt any **FIVE** of the following: (10)
- a) What is buffer index? Write its equation.
 - b) How to prepare and standardize 0.5 N HCl and 0.5 N NaOH solution?
 - c) Write theory principle involved in assay of Ibuprofen and Metformin HCl.
 - d) Classify various sampling techniques.
 - e) Define and classify errors.
 - f) Write advantages of non-aqueous titrations.
- Q.2** a) Explain neutralization curve of strong acid and strong base. (07)
b) How to minimize errors. (03)
- Q.3** a) What is non-aqueous titration? Give different types of solvents used in non-aqueous titration. Discuss with suitable examples non-aqueous titration of very weak acid. (07)
b) Explain in brief systematic (determinate) errors. (03)
- Q.4** Write short note on any **TWO** of the following: (10)
- a) Applications of non-aqueous
 - b) Theories of acid-base indicators
 - c) Gas sampling technique.

SECTION-II

- Q.5** Attempt any **FIVE** of the following: (10)
- a) Calculate the solubility of Magnesium hydroxide in mg/100 ml, if the solubility product of Magnesium hydroxide is 6.03×10^{-10} (Mol.Wt of Magnesium Hydroxide is 58.33).
 - b) Define precipitation titrations. Explain factors affecting solubility product.
 - c) How to prepare and standardize 0.1 N Iodine solution and 0.1 N KMnO_4 .
 - d) Write principle, reaction and assay of H_2O_2 and Magnesium sulphate.
 - e) Why KI is added during preparation of iodine solution.
 - f) Why polyvalent ions are titrated by using EDTA in alkaline pH.
- Q.6** a) Discuss various factors affecting stability constants. Explain types of EDTA titration. (07)
b) Write in brief about redox potential. (03)
- Q.7** a) What are redox titrations? Explain the iodimetry and iodometric type of titration? (07)
b) Write assay, principle involved in assay of NaCl. (03)
- Q.8** Write short note on any **TWO** of the following: (10)
- a) Metallochrome indicators
 - b) Permanganate titration
 - c) Gay Lussac's method.