V P & R P T P Science College
Vallabh Vidyanagar
B. Sc. (Third Semester Examination)
US03EICH01 – TRADITIONAL METHODS OF ANALYSIS

Wednesday, 5th Oct, 2016
Time: 3.00p.m. to 4.00 p.m.   Total Marks: 25

Instructions: (i) All questions are to be attempted in your answer book.
                     (ii) Figures to the right indicate marks.

Q.1.   Answer the following: [03]
  i.   Solution which maintains constant pH is called
        (a) lewis acid
        (b) lewis base
        (c) buffer
        (d) salt
  ii.   EDTA is the best_____.
        (a) Reducing agent
        (b) indicator
        (c) buffer
        (d)chelating agent
  iii. Which of the following acid is added in titration of potassium
        permanganate?
        (a) Sulphuric acid
        (b) Hydrochloric acid
        (c) Nitric acid
        (d) all of these

Q.2.   Answer any two: [04]
  i.   Define:
        (a)Indicator and Titration error.
        (b)Equivalence point and End point
  ii.   Define with example: Complexing agent, Chelating agent, Chelate and
        Stability constant.
  iii. Define; Oxidizing agent, Reducing agent, Electrochemical cell and Voltage.

Q.3.   Discuss the different types of reactions involved in volumetric analysis.   [06]
                                    OR

Q.3.   Show that at the color change interval, pH of the system is pH= pK$_{In}$ +_1.   [06]

Q.4.   Discuss different types of EDTA titrations.   [06]
                                    OR
Q.4.   Define complex ion. Explain stability constant and formation of complex ion   [06]
        by taking proper example.

Q.5   Show that there sudden change in potential of the system near equivalence   [06]
        point in redox titration by considering Cerium (IV) sulphate- Ferrous
        sulphate system.
                                    OR
Q.5   Whether potassium permanganate acts as a primary standard or not?   [06]
        Why? What are the precautions to be made to store it?

"They conquer who believe they can"