

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

Monday, 13<sup>th</sup> Oct, 2014

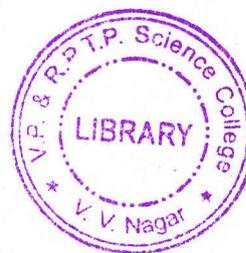
Time: 2.00p.m. to 3.00 p.m.

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) strong acid  
(b) strong base  
(c) buffer  
(d) salt
- ii. EDTA is the best \_\_\_\_\_.  
(a) oxidizing 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) Titrant and Titrand  
(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 types of reactions involved in titrimetric 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 by taking proper example. [06]
- Q.5.** Show that there sudden change in potential of the system near equivalence point in redox titration by considering Cerium (IV) sulphate- Ferrous sulphate system. [06]  
OR
- Q.5.** Whether potassium permanganate acts as a primary standard or not? Why? What are the precautions to be made to store it? [06]



*“They conquer who believe they can”*