

V P & R P T P Science College

Vallabh Vidyanagar

B. Sc. (Third Semester Examination)

US03EICH01 – TRADITIONAL METHODS OF ANALYSIS

Monday, 13th 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 $\text{pH} = \text{pK}_{\text{in}} + 1$.

[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"