V P & R P T P Science College

Vallabh Vidyanagar

B. Sc. (Third Semester Examination)

US03EICH01 – TRADITIONAL METHODS OF ANALYSIS

Saturday, 05th October, 2013

Time: 1.00p.m. to 2.00 p.m. Total Marks: 30

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

Q.1. Answer the following: [06]

i. A dilute solution of sodium carbonate was added to two test tubes one containing dil HCl(A) and the other containing dil NaOH(B).The correct observation was
(a)A brown gas liberated in test tube A (b) A brown gas liberated in test tube B (c)A colourless gas liberated in test tube A (d) A colourless gas liberated in test tube B

ii. Which solution is used to maintain constant pH, if a small amount of acid or base is added to it?
(a) strong acid (b) strong base (c) buffer (d) salt

iii. EDTA is the best_____.
(a) oxidising agent (b) indicator (c) buffer (d)chelating agent

iv. Complexing agent is a ligand which is
(a) monodentate (b) bidentate (c) tridentate (d) all of these

v. Which of the following indicator is added in the titration of $KMnO_4$ with $FeSO_4$
(a) $KMnO_4$ (b) Mureoxide (c) Starch (d) Eriochrome black- T

vi. Which of the following is a redox titration?
(a) titration of HCl with NaOH
(b) titration of CH_3COOH with NaOH
(c) titration of $FeSO_4$ with $KMnO_4$
(d) all of these

.Q.2. Answer any three: [06]

i. Define: Titrant and Titration error.

ii. What is middle tint of an indicator.

iii. Define with example: Chelating agent & Demasking agent

iv. Discuss back titration used for EDTA titration.

v. Define: Reducing agent & Voltage

vi. Sulphuric acid is used for potassium permanganate titration in place of hydrochloric acid.

Q.3. Discuss the types of reactions involved in titrimetric analysis. [06]

OR

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

Q.4. Discuss on titration mixture with respect to selectivity, masking and demasking agents. [06]

OR

Q.4. What are the requisites for metal ion indicator for use in visual detection of end point. [06]

Q.5. Explain titration curve for iron(II) & cerium(IV) in detail. [06]

OR

Q.5. Write a note on redox indicator. [06]

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