

# UKA TARSADIA UNIVERSITY

**B.Pharm. (3rd Semester)**

**Subject :030020304-Pharmaceutical Analysis I**

Time : 10:00 am to 1:00 pm

Date : **02/01/2014**

**Duration : 3 Hours**

**Max. Marks: 70.**

**Instructions:**

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks allocated to that question.
5. Draw diagrams/figures whenever necessary.

## **SECTION – 1**

**Q-1 (A) Do as directed.**

**[07]**

- I) Leveling effect
- II) Buffer capacity
- III) Primary standard substance
- IV) Specificity
- V) Robustness
- VI) Solubility product
- VII) Nucleation

**Q-1 (B) Answer the following in brief. (Any 4)**

**[08]**

- I) Write a short note on Iodometry.
- II) Co-precipitation
- III) Post precipitation
- IV) Digestion
- V) Principle of estimation of chloride by Mohr's method.
- VI) Masking and demasking agents.

**Q-2 Answer the following.**

**[10]**

- A) Explain theories of acid-base indicators.

**OR**

- A) Enlist end point determination method in precipitation titration. Write note on Fajan's method of halogen determination.
- B) What is hydrolysis? Derive the equation to find out the pH of aqueous solution of strong acid and weak base.

**OR**

- B) Write a note on titration with potassium permanganate.

**Q-3 Answer the following in detail. (Any 2)**

**[10]**

- A) Write a note on gravimetric method of analysis.
- B) Write a note on Diazotization nitrite titration.
- C) Describe in detail the oxygen combustion flask method.

## SECTION – 2

### **Q-4 (A) Do as directed.**

**[07]**

- I) What is oxidizing agent? Give their example.
- II) Write a Law of mass action.
- III) Accuracy.
- IV) Comment on: KI is added in preparation of standard solution of iodine
- V) Comment on: Starch indicator should be added near the end point in iodine titration.
- VI) Comment on: Chloroacetic acid is stronger acid than acetic acid.
- VII) Comment on: Nitrobenzene is added in the estimation of chloride by Volhard's method.

### **Q-4 (B) Answer the following in brief. (Any 4)**

**[08]**

- I)  $K_{sp}$  of  $Ag_2CrO_4$  is  $7.3 \times 10^{-10}$ . Calculate the molar solubility and solubility in g/ml. Mol. Wt of  $Ag_2CrO_4 = 337.73$ .
- II) Define the solvent used in non aqueous titration.
- III) Write advantage of Volhard's method over Mohr's method.
- IV) Differentiate Lyophobic colloids and Lyophilic colloids.
- V) Explain principle of RIA.
- VI) Why is phenolphthalein colorless below pH 8.3 and above pH 13?

### **Q-5 Answer the following.**

**[10]**

- A) Calculate the pH at 0 ml addition of titrant, half neutralization point and at equivalence point during the titration of 20 ml 0.1N acetic acid with 0.1N NaOH.  $K_a$  of acetic acid  $= 1.8 \times 10^{-5}$ .

**OR**

- A) What are the different types of errors? Describe the techniques to minimize the errors.
- B) What are the different types of EDTA titrations? Describe any one in detail.

**OR**

- B) What is buffer? Write their application in pharmaceutical.

### **Q-6 Answer the following in detail. (Any 2)**

**[10]**

- A) Write a note on Karl fisher titration
- B) Give the importance of quality control and quality assurance in formulation analysis
- C) Explain the term solubility product constant. Discuss applications of solubility product principle in analysis.