

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 7.3×10^{-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 = 1.8×10^{-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.