Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharmacy Sem-III Regular / Remedial Examination Dec. 2010

Subject code: 230004 Subject Name: Pharmaceutical Analysis I

Date: 16 /12 /2010 Time: 10.30 am – 01.30 pm

Instructions: **Total Marks: 80**

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 (a) Give Comment on **(Any Three)** **06**

1. Water is levelling solvent, while acetic acid is differentiating solvent for nitric acid, hydrochloric acid and perchloric acid.
2. KI is added in preparation of standard solution of iodine.
3. Organic solvent is added in volhard's method.
4. In the titration of 0.1M NH_3 with 0.1 M HCL, Phenolphthalein can be employed as an indicator.

(b) Differentiate following with suitable examples. **05**

1. Lyophobic colloid and lyophillic colloid.
2. Masking and demasking agents.

(c) Write a short note on pharmaceutical buffer. **05**

Q.2 (a) Write note on solvent, titrant and indicator used for weak acid & weak base substance in non-aqueous titration. **06**

(b) Give the applications of non aqueous titration. **05**

(c) Discuss merits and Demerits of non aqueous titration over aqueous titration. **05**

Q.3 (a) What is the effect of pH on the solubility of precipitates? Enlist the end point detection methods in precipitation titration. Explain fajan's method in detail. **06**

(b) What is Co-precipitation? Give types of Co-precipitation and note on common source of co-precipitation. **05**

(c) Explain terms **05**

1. Solubility product 2.Post precipitation 3. Titratable acidity
4. Primary standard substance 5. Nucleation

Q.4 (a) What is error? Classify the error and how will you minimize the error? **06**

(b) What is analytical method validation? Enlist validation parameters. **05**
Differentiate: (1) Robustness and ruggedness (2) Accuracy and precision

(c) Give the importance of quality control and quality assurance in formulation analysis **05**

Q.5 (a) Give the composition of Karl Fischer Reagent. What are the limitations of KFT? Write in detail about end point detection methods in KFT. **06**

(b) Give the types of redox titration. Enumerate end point detection method for Redox titration. Give detail about internal indicator method. **05**

(c) Explain acid base indicators in detail. **05**

Q. 6 (a) Partition coefficient is 4 in ether/H_2O system, compare the efficiency of extraction of 10 ml aqueous solution of compound with, a) 40 ml portion of ether b) 2 times 20 ml portion of ether, c) 4 times 10 ml portion of ether. Give the comment. **06**

(b) Calculate titration curve for the titration of 24 ml of 0.2 M n-butyl amine, pKa 10.60 with 0.3 M HCL (titrant). Calculate pH for 0,2,10,15,16,18 ml. **05**

(c) (1) Ksp of Ag_2CrO_4 is 7.3 X 10^{-12}. Calculate the molar solubility and solubility in g/ml. Mol. Wt of Ag_2CrO_4=337.73. **05**

(2)Calculate the pH of buffer solution prepared by dissolving 242.2 mg of tris (hydroxyl methyl) amino methane in 10.0 ml of 0.170 M HCl and diluting to 100 ml with water. The molecular weight of solute is 121.1 and the pKa is 8.08 for the conjugated acid.

Q.7 (a) Give in detail about chelating agent. Enlist the different type of complexometric titration. Explain replacement type of complexometric titration in detail with suitable example. **06**

(b) Write a short note on counter current extraction. **05**

(c) Explain the method for the determination of nitrogen. **05**

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