Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Ph SEM-III Examination- Dec.-2011

Subject code: 230004 **Date: 19/12/2011**

Subject Name: Pharmaceutical Analysis-I

Time: 10.30 am-01.30 pm **Total marks: 80**

Instructions:

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

Q.1	(a)	Attempt the following questions. 1. Define : Primary standard substance , Specificity and Robustness 2. How to prepare 250 ml 0.087N HCl solution ?	**06**
	(b)	Classify pharmaceutical analysis briefly.	**05**
	(c)	Write a short note on sampling techniques for solids and liquids.	**05**
Q.2	(a)	What is hydrolysis? Derive the equation to find out the pH of aqueous Solution of NaCN.	**06**
	(b)	Write a short note on Physiological and Pharmaceutical Buffers.	**05**
	(c)	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. Ka of acetic acid=1.8×10^{-5}.	**05**
Q.3	(a)	Explain theories of acid-base indicators.	**06**
	(b)	Attempt the following questions. 1. Standardization of Tetra butyl ammonium hydroxide solution. 2. Explain common ion effect.	**05**
	(c)	Discuss redox indicators in detail.	**05**
Q.4	(a)	During the titration of 10 ml of 0.11N Ferrous sulphate with 0.1N cerric Salt solution, calculate the potential at 2ml , half equivalence point and at equivalence point. E^o Fe+2/Fe+3 = +0.77 V E^o Ce+4/Ce+3 = +1.60 V	**06**
	(b)	Attempt the following questions. 1. Write a short note on Iodometry. 2. Assay principle of Sulphanilamide.	**05**
	(c)	Justify any five comments. 1. Phenolphthalein cannot be used as indicator in the titration of sodium Carbonate with HCl. 2. Starch indicator should be added near the end point in iodine titration. 3. Acetic anhydride is used in the preparation of Standard Perchloric acid Solution. 4. NH_3-NH_4Cl buffer is used in the assay of Magnesium Sulphate. 5. Aliphatic amines cannot be analysed by nitrite titration. 6. Chloroacetic acid is stronger acid than acetic acid. 7. Nitrobenzene is added in the estimation of chloride by Volhard's method.	**05**

Q.5 (a) Attempt the following questions. **06**

1. Assay Principle of Calcium Gluconate as per IP'96.
2. Explain adsorption Indicator method with suitable Example.

(b) Write a short note on types of complexometric titrations and stability of Complex. **05**

(c) Levelling and differentiating effect of the solvent in non-aqueous titration. **05**

Q. 6 (a) Explain the followings in case of gravimetric Analysis. **06**

1. Von-Weimarn ratio
2. Co-precipitation
3. post precipitation
4. Digestion

(b) Explain Solubility product and its importance in precipitation**.** **05**

(c) Attempt the following questions. **05**

1. Aspirin has Partition Coefficient 4 between ether and water system. 10 ml Of aqueous solution of aspirin is extracted 8 times with 5 ml of ether (Fresh ether each time). What will be the % of aspirin extracted after 8 times Extractions?

Q.7 (a) Attempt the following questions. **06**

1. Explain principle of Karl-fisher titration.
2. Principle of estimation of chloride by Mohr's method.

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

(c) Attempt the following questions. **05**

1. Give the principle of Kjeldahl method.
2. Discuss about oxygen flask combustion method.

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