Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – III • EXAMINATION – SUMMER • 2014

Subject Code: 230004 Date: 10-06-2014

Subject Name: Pharmaceutical Analysis-I

Time: 02:30 pm - 05:30 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)	What is error? Classify the error and how will you minimize the error?	**06**
	(b)	What is analytical method validation? Enlist validation parameters. Differentiate: (1) Robustness and Ruggedness (2) Accuracy and Precision	**05**
	(c)	Enumerate areas of application of acid-base buffers. Derive Henderson-Hasselbach equation for finding pH of buffer solution.	**05**
Q.2	(a)	What is hydrolysis? Derive equation for finding pH of aqueous solution of salt of weak acid and strong base.	**06**
	(b)	Describe the theory of indicators.	**05**
	(c)	Calculate pH of 5 gm solution of sodium salt of Sulphathiozole (weak acid). Which has a pKa=7.12 (Molecular Weight=304.3)	**05**
Q.3	(a)	What is importance of non-aqueous titration? Discuss Differentiating and Leveling effect of solvent.	**06**
	(b)	Give the types of Redox titration. Enumerate end point detection method for Redox titration.	**05**
	(c)	Give detail about internal indicator method.	**05**
Q.4	(a)	Enlist the different type of complexometric titration. Explain replacement type of complexometric titration in detail with suitable examples.	**06**
	(b)	Enlist the end point detection methods in precipitation titration. Explain fajan's method in detail.	**05**
	(c)	Describe diazotization nitrite titration.	**05**
Q.5	(a)	What is Co-precipitation? Give types of Co-precipitation and note on common source of co-precipitation.	**06**
	(b)	Differentiate following with suitable examples. 1. Lyophobic colloid and lyophillic colloid. 2. Masking and demasking agents.	**05**
	(c)	Explain importance of von-weimarn ratio in gravimetry. Discuss factor affecting purity of precipitate.	**05**
Q. 6	(a)	Discuss the role of pH in the solvent extraction. How mixture of Caffeine and aspirin be separated by solvent extraction?	**06**
	(b)	Write a note on Karl fischer Titrartion	**05**

(c) Calculate % of drug extracted if a drug having K=5, 100 ml of solution containing drug is extracted with **05**
(a) 100 ml of ether
(b) 2 times with 50 ml of ether
(c) 4 times with 25 ml of ether
(d) 10 times with 10 ml of ether

Q.7 (a) (a) Give Comment on **(Any Three)** **06**
1. Why is phenolphthalein colorless below pH 8.3 and above pH 13?
2. KI is added in preparation of standard solution of iodine.
3. Nitrobenzene is used in Volhard's method of halogen estimation.
4. Equivalent weight of KMnO4 changes with the media

(b) Write a note on pM Indicator **05**

(c) Explain Terms: **05**
(1) Iodometry (2) Iodimetry (3) Nucleation
(4) Common ion effect (5) Buffer Capacity.

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