Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – I • EXAMINATION – SUMMER 2013

Subject Code: 2210003 **Date: 15-05-2013**

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)**	Explain the followings: 1. Calibration 2. Molarity 3. Differentiating solvent	**06**
	(b)	Answer the followings (i) Why nitro benzene is added in volhard's method? (ii) Which compound is used for standardization of hydrochloric acid? (iii) Why buffer is added in complexometric titration? (iv) Why acetic acid is added in preparation of perchloric acid? (v) Which compounds can be used in place of starch solution as an indicator?	**05**
	(c)	Differentiate the following with suitable example (i) Iodometry and Iodimetry titration (ii) Masking agents and Demasking agents	**05**
Q.2	**(a)**	Enlist different type of complexometric titration. Explain the assay principle of calcium lactate.	**06**
	(b)	What is ligand? Briefly classify ligand with suitable example.	**05**
	(c)	Write a note on different solvents used in non aqueous titration.	**05**
Q.3	**(a)**	Write a note on Kjeldahl method.	**06**
	(b)	Write the name of method used for estimation of water in pharmaceuticals. Explain the principle of that method.	**05**
	(c)	Write a note on gravimetric method of analysis.	**05**
Q.4	**(a)**	Decribe preparation and standardisation of 0.1M sodium thiosulphate solution.	**06**
	(b)	Enlist different type of redox titration. Discuss any one in detail.	**05**
	(c)	Enlist different end point detection method used in redox titration. Discuss them.	**05**
Q.5	**(a)**	Explain non-aqueous titration. Write the name of titrants and indicators used in non-aqueous titration.	**06**
	(b)	Explain Fajan's method for chloride estimation.	**05**
	(c)	Explain the law of mass action.	**05**
Q. 6	**(a)**	Derive the pH equation for the followings (i) Ammonium chloride (ii) Ammonium formate	**06**
	(b)	Explain theory of acid-base indicator.	**05**
	(c)	Define buffer solution and buffer action. Derive Henderson-Hasselbach equation for buffer.	**05**
Q. 7	**(a)**	Define error. Enlist different type of errors. Describe the techniques to minimize the errors.	**06**
	(b)	Write a note on co-precipitation and post-precipitation.	**05**
	(c)	The solubility product of magnesium hydroxide is 3.4×10^{-11} mol^3/L^3. Calculate its solubility in g/L. (Atomic weight of Mg=24.3, O=16, and H=1).	**05**

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