Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. PHARM. - SEMESTER – III • EXAMINATION – WINTER 2012

Subject code: 230004 Date: 02/01/2013

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)	Explain: Validation, Accuracy, Precision, Limit of Detection, Limit of Quantitation, Calibration	06
	(b)	Give a suitable classification of errors. Add a note on minimization of errors.	05
	(c)	Give an account of Karl-Fischer titrations.	05
Q.2	(a)	What is non aqueous titration? Discuss the theory of non aqueous titrations. How are solvents selected for non aqueous titrations?	06
	(b)	Explain: Hydrolysis. Derive: $pH = ½\{ pK_w + pK_a + \log [salt] \}$	05
	(c)	What will be pH and percentage hydrolysis of 0.2M KCN solution. Ka = 4.9×10^{-10}.	05
Q.3	(a)	What is gravimetric analysis? Enlist the steps involved in gravimetric analysis. Discuss in detail the precipitation techniques employed in gravimetry.	06
	(b)	Give a detailed account of Oxygen Flask Combustion method.	05
	(c)	Describe multiple extraction technique.	05
Q.4	(a)	Enlist different types of redox titrations. Describe iodine methods in detail.	06
	(b)	Discuss the factors affecting precipitation reaction in argentometric titrations.	05
	(c)	Name the methods used for end point detection in precipitation titrations and discuss any one of them.	05
Q.5	(a)	Explain: Ligand, Chelate. Give an account of different types of EDTA titrations.	06
	(b)	Discuss applications of complexometric titrations.	05
	(c)	Write short notes: (i) pM indicators (ii) Masking and demasking agents	05
Q. 6	(a)	Define: Buffer, Buffer capacity. Derive Henderson-Hesselbach equation.	06
	(b)	A buffer solution is prepared by mixing 100 ml. of 0.2 M acetic acid and 50 ml of 0.5M Sodium acetate. What will be pH of the resulting solution? Ka = 1.8×10^{-5} .	05
	(c)	Write an explanatory note on Kjeldahl method.	05
Q.7	(a)	Describe any one continuous extraction method.	06
	(b)	Discuss at length diazotization titrations.	05
	(c)	Write short notes: (i) Organic precipitants (ii) Co-precipitation.	05

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