Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – IV • EXAMINATION – WINTER • 2015

Subject Code: 240004 Date: 05-01-2016

Subject Name: Pharmaceutical Analysis - II

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 S/N ratio. What are different types of Instrumental noise? How the S/N ratio can be enhanced?	**06**
	(b)	Write note on TGA? Explain the application of DSC in detail.	**05**
	(c)	How will you determine pKa value of acetic acid pH meter?	**05**
Q.2	(a)	Give construction and working of Ploarimeter. Give its application in brief	**06**
	(b)	Calculate the specific rotation and molecular rotation of 15 gms of 100 ml solution showing a rotation of + 9.8^0 in polarimeter tube of 10cm. the molecular weight of the substance is 180.	**05**
	(c)	Write note on following (i) ORD and CD (ii) Differentiate between Polarizer and analyzer	**05**
Q.3	(a)	What are different retention mechanisms in chromatography? Elaborate any two in detail.	**06**
	(b)	Explain Kohlraush law. Give its application. Explain factors affecting electrolytic conductance.	**05**
	(c)	Explain following (i) Frontal analysis, Displacement analysis and Elutional analysis as chromatographic development technique (ii) Hydrolysis of cane sugar is known as Inversion of cane sugar	**05**
Q.4	(a)	Distinguish between following pair (i) Diffusion current and residual current (ii) Equivalent conductance and specific conductance (iii) Transverse wave and longitudinal wave	**06**
	(b)	What are different types of electrodes? Elaborate working and construction of SHE. Enlist its advantages and disadvantages.	**05**
	(c)	What are advantages of TLC over paper chromatography? Discuss the pharmacopoeial application of Column chromatography.	**05**
Q.5	(a)	Write comment on following (i) DME is not suitable to be used as Anode. (ii) Roll of supporting electrolyte in polarography. (iii)Zinc silicate is used in TLC	**06**
	(b)	Explain Van Deemter equation. Discuss the factors affecting band broadening and how it can be minimized.	**05**
	(c)	Discuss the working and construction of Combined glass membrane electrode. How it is calibrated.	**05**

Q. 6 (a) Write note on following : **06**
(i) Biamperometric titration
(ii) Half wave potential

(b) Explain the working of DME and write the advantages and limitation of DME. **05**

(c) The transport no. of H^+ ion in HCl and CH_3COO^- ion in CH_3COONa are 0.81 and 0.47 respectively. The Equivalent conductance at infinite dilution of HCl and CH_3COONa are 426 ohm^{-1} cm^{-2} $equt^{-1}$ and 90 ohm^{-1} cm^{-2} $equt^{-1}$ respectively. Calculate the equivalent conductance of acetic acid at infinite dilution. **05**

Q.7 (a) Define the following terminology **06**
(i) Capacity factor, (ii) Resolution, (iii)Retention factor
(iv) HETP, (v) Limiting Current, (iv) Standard reduction potential

(b) Explain different types of conductometric titration. **05**

(c) Explain validation and describe the validation of instrumental analytical methods. **05**

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