Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. - SEMESTER–II • EXAMINATION – SUMMER-2016

Subject code: 2220002
Subject Name: Pharmaceutical Chemistry-II (Physical Chemistry)
Time: 10:30 AM to 1:30 PM **Date: 08/06/2016**
Instructions: **Total Marks: 80**

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

Q.1	**(a)**	Explain in detail Debye-Huckel theory.	**06**
	(b)	Define Quantam yield of Photochemical reaction. Give reasons for high & low Quantam yield.	**05**
	(c)	State and explain Raoult's Law.	**05**
Q.2	**(a)**	Differentiate the following pair: (1) Molecularity of a reaction & order of a reaction. (2) Physical absorption & Chemisorption. (3) Homocatalysis & Heterocatalysis.	**06**
	(b)	Explain Characteristics of Catalyst.	**05**
	(c)	What is Refractive Index? Give its importance in Pharmacy. Enlist the factors affecting refractive index.	**05**
Q.3	**(a)**	Write a note on Gibb's adsorption equation & isotherm.	**06**
	(b)	State the Distribution Law. Explain Partition Coefficient with suitable examples.	**05**
	(c)	Explain terms: (1) Parachor (2) Dipole Moment (3) Specific Conductance (4) Optical rotation (5) Rheochor	**05**
Q.4	**(a)**	What is Phase-rule? Describe phase diagram of water.	**06**
	(b)	Discuss various methods for the determination of Surface tension.	**05**
	(c)	Define & Enlist Colligative Properties. Explain any two in detail.	**05**
Q.5	**(a)**	Define Viscosity & explain its application. Discuss Ostwald's Viscometer.	**06**
	(b)	Derive Reaction rate constant & half-life for first order reaction kinetics.	**05**
	(c)	Write a note on "The Carnot Cycle".	**05**
Q.6	**(a)**	State & explain First law of Thermodynamics with various modifications.	**06**
	(b)	A solution of 0.250g of a substance in 50.0 l of acetic acid has freezing point of 0.320°C below that of pure acid 16.6°C .Calculate the molecular mass of substance.(specific Latent heat of Fusion of acetic acid is 180.75 J/g, gas constant, R=8.314 J/K*mol).	**05**
	(c)	Enlist various methods for the determination of order of reaction.	**05**
Q.7	**(a)**	What is Photochemistry? Draw a Jablonski diagram & explain consequences of Light absorption.	**06**
	(b)	Note on Acid-base Enzyme Catalysis.	**05**
	(c)	Give a difference between ideal & real Solution.	**05**

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