Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM – SEMESTER – 2- EXAMINATION –WINTER - 2018

Subject Code:2220002 Date: 13/12/2018
Subject Name: Pharmaceutical Chemistry-II (Physical Chemistry)
Time:02:30 PM TO 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 Refractive Index? Give its importance in Pharmacy. Enlist the factors affecting refractive index.	**06**
	(b)	Define: Viscosity and fluidity. Describe principle of Ostwald's viscometer.	**05**
	(c)	Discuss the measurement of surface tension by drop formation method.	**05**
Q.2	**(a)**	Define: Fluorescence, Phosphorescence and Chemiluminescence.	**06**
	(b)	Draw a Jablonski diagram & explain consequences of Light absorption.	**05**
	(c)	Define: photochemistry. Explain Lambert – Beer law.	**05**
Q.3	**(a)**	Explain in detail Debye-Huckel theory.	**06**
	(b)	Define & Enlist Colligative Properties. Explain any two in detail.	**05**
	(c)	Define: Molarity and Normality. Explain Henry's law in brief.	**05**
Q.4	**(a)**	State & explain first law of Thermodynamics with various modifications.	**06**
	(b)	Enlist various methods for the determination of order of reaction.	**05**
	(c)	Define enthalpy. How enthalpy of a chemical reaction can be calculated?	**05**
Q.5	**(a)**	Differentiate between: (i) Adsorption and Absorption (ii) Physical adsorption and Chemical adsorption.	**06**
	(b)	Explain in detail Langmuir Adsorption isotherms.	**05**
	(c)	Discuss applications of adsorption in pharmacy.	**05**
Q. 6	**(a)**	State and explain phase rule. Describe phase diagram of water.	**06**
	(b)	Derive Reaction rate constant & half-life for first order reaction kinetics.	**05**
	(c)	Write a note on "The Carnot Cycle".	**05**
Q.7	**(a)**	State and explain Raoult's law of dilute solution. Discuss deviation of real solution from the Law.	**06**
	(b)	Write a note on Parachlor.	**05**
	(c)	Discuss Acid-base Enzyme Catalysis in detail.	**05**

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