Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BPHARM – SEMESTER I • EXAMINATION – SUMMER - 2013

Subject code: 220003 Date: 31-05-2013

Subject Name: Pharm. Chemistry II

Time: 02:30 pm to 05:30 pm Total Marks: 70

Instructions:

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

Q.1	(a)	State and explain first law of thermodynamics. Write in brief about various types of thermodynamic processes.	**06**
	(b)	Write a note on carnot cycle.	**05**
	(c)	Define the following terms: (1) Surface tension (2) Viscosity (3) Parachor (4) Optical rotation (5) Colligative properties	**05**
Q.2	(a)	Define the following terms: (1) Heat of formation (2) Heat of combustion (3) Molar heat capacity	**06**
	(b)	Describe Kirchoff"s law in detail.	**05**
	(c)	Write a note on Joule Thomson effect.	**05**
Q.3	(a)	What is phase rule? Discuss water system with reference to phase rule.	**06**
	(b)	State and explain Henry's law	**05**
	(c)	Write in detail factors affecting viscosity.	**05**
Q.4	(a)	Derive the rate constant equation for first order reaction. Expalin how to derive half-life equation for first order reaction.	**06**
	(b)	Write the difference between order of reaction and molecularity of reaction.	**05**
	(c)	What is Raoult's law? Describe the deviations from raoult's law.	**05**
Q.5	(a)	Enlist the laws of photochemistry. Describe any one in detail.	**06**
	(b)	Define quantum yield of a photochemical reactions giving reasons of high and low quantum yield.	**05**
	(c)	Write a note on Debye-Huckle theory.	**05**
Q. 6	(a)	What is adsorption? Explain Langmuir's adsorption isotherm in detail.	**06**
	(b)	State the application of adsorption.	**05**
	(c)	Define normality and molarity. Calculate the normality of a solution containing 35 gms of oxalic acid (molecular weight = 126) dissolved in 500 ml of solution.	**05**
Q.7	(a)	What is radioactivity? What are the different types of radiations emitted by radioactive substances. Explain it in detail.	**06**
	(b)	Write a note on Geiger- muller counter.	**05**
	(c)	State the applications of radioactivity.	**05**

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