Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Pharm - SEMESTER– II • EXAMINATION – SUMMER 2017

Subject code: 220003 **Date: 07/06/2017**

Subject Name: Pharmaceutical Chemistry – II

Time: 10:30 AM to 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)	Define surface tension. Explain methods for determination of surface tension.	**06**
	(b)	Write a concise statement of the first law of thermodynamics. Derive its mathematical form and explain the terms involved.	**05**
	(c)	Give methods to determine order of reactions.	**05**
Q.2	(a)	Explain Freundlich and Gibbs adsorption isotherms	**06**
	(b)	Distinguish between isothermal and adiabatic process.	**05**
	(c)	Derive the mathematical expression of Beer-Lambert Law.	**05**
Q.3	(a)	Explain the relation between elevation of boiling point and lowering of vapour pressure. Derive an equation for determination of molecular mass from elevation of boiling point.	**06**
	(b)	What is the basic principle of Joule-Thomson effect?	**05**
	(c)	Describe the theory of homogeneous and heterogeneous catalysis.	**05**
Q.4	(a)	Define radioactivity.Explain methods for detection and measurement of radioactive radations.	**06**
	(b)	Explain second order kinetic reaction and derive an integrated rate equation for it.	**05**
	(c)	Explain Langmuir theory of adsorption.	**05**
Q.5	(a)	State the phase rule. Describe the derivation of the phase rule from thermodynamic considerations.	**06**
	(b)	Explain the Rast's camphor and Beckmann's method for measurement of depression of freezing point.	**05**
	(c)	Give pharmaceutical applications of radioactive isotopes.	**05**
Q. 6	(a)	Explain Debye-Huckel theory in detail.	**06**
	(b)	Define viscosity. Describe measurement of viscosity by Ostwald Method.	**05**
	(c)	Define the terms: open system, closed system, isolated system, extensive properties and intensive properties.	**05**
Q. 7	(a)	Explain the Carnot cycle in detail.	**06**
	(b)	Explain types of radioactive decay, rate of radioactive decay and half life.	**05**
	(c)	Write short note on a) The Grothus-Draper law b) The Stark-Einstein law of Photochemical Equivalence	**05**

****