

GUJARAT TECHNOLOGICAL UNIVERSITY
BPHARM – SEMESTER II • EXAMINATION – WINTER • 2014

Subject code: 2220002**Date: 03-12-2014****Subject Name: Pharmaceutical Chemistry-II (Physical Chemistry)****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) Define: Adsorption. Explain Freundlich Adsorption isotherms.	06
	(b) Explain in detail Langmuir Adsorption isotherms.	05
	(c) Difference between (i) Adsorption and Absorption (ii) Physical adsorption and Chemical adsorption.	05
Q.2	(a) Define: Thermodynamics. Explain first law of thermodynamics.	06
	(b) What is the basic principle of Joule –Thomson effect.	05
	(c) Distinguish between (i) Reversible and irreversible process (ii) Isothermal and adiabatic process	05
Q.3	(a) Define: (i) Refractive index (ii) Parachor (iii) Specific rotation (iv) Optical activity	06
	(b) Define: Viscosity and fluidity. What are its units? Explain determination of coefficient of viscosity for a liquid using Ostwald's viscometer.	05
	(c) Define: surface tension. What are its units? Explain drop weight method for the determination of the surface tension.	05
Q.4	(a) Define: Molarity and Normality. Explain state and limitation of Henry's law.	06
	(b) Define: Colligative property. Describe in detailed lowering of the Vapour pressure.	05
	(c) Define: Depression of freezing point. Explain Rast's camphor method.	05
Q.5	(a) Define: Order of reaction. Derive integrated rate equation for first order.	06
	(b) What is catalysis? Write a note on homogeneous and heterogeneous catalyst.	05
	(c) What are the characteristic of catalytic reaction?	05
Q. 6	(a) Define: photochemistry. Explain Lambert – Beer law.	06
	(b) Write a note on Jablonski diagram.	05
	(c) Explain the laws of photochemistry.	05
Q.7	(a) Define: Fluorescence, Phosphorescence and Chemiluminescence.	06
	(b) State and explain Raoult's law.	05
	(c) Write a short note on 'Elevation in boiling point'.	05
