Exam Seat No:_____ **Enrollment No:**_____

C.U.SHAH UNIVERSITY

WADHWAN CITY

University (Winter) Examination -2013

Course Name :B.Pharm Sem-I **Subject Name: - Pharmaceutical Chemistry II (Physical)** **Marks : 70**

Duration :- 3:00 Hours **Date : 10/01/2014**

Instructions:-

(1) Attempt all Questions of both sections in same answer book / Supplementary.
(2) Use of Programmable calculator & any other electronic instrument is prohibited.
(3) Instructions written on main answer Book are strictly to be obeyed.
(4) Draw neat diagrams & figures (If necessary) at right places.
(5) Assume suitable & Perfect data if needed.

SECTION-I

Q.1 **Define the following terms:** **07**

a) Surface Tension
b) Viscosity
c) Refractive Index
d) Parachor
e) Dipole Moment
f) Optical Activity
g) Partition Coefficient

Q.2 **(a)** Explain Ostwald's Viscometer for the determination of viscosity. **05**

(b) 0.440 gm of substance dissolved in 22.2 gm of benzene lowered the freezing point of benzene by 0.567^{o}C, Calculate the molecular mass of the substance. (K_f = 5.12 ^{o}C mol^{-1}). **05**

(c) State & explain the following Laws: (1) Henry's Law (2) Raoult's Law **04**

OR

Q.2 **(a)** Write in brief about various types of thermodynamic processes. **05**

(b) State and Explain first, second and third law of thermodynamics. **05**

(c) Explain (i) Joule-Thomson effect (ii) Enthalpy of Thermodynamic system. **04**

Q.3 **(a)** Write about various methods for the determination of surface tension. **07**

(b) What is phase rule? Discuss one component and three phase system with reference to phase rule. **07**

OR

Q.3 **(a)** What is meant by freezing point depression? Derive equation to determine the molecular weight from depression of freezing point. **07**

(b) Explain, giving examples: Additive, Constitutive and Colligative properties. **07**

SECTION-II

Q.1 Define the following terms: **07**

a) Order of Reaction
b) Half life
c) Catalyst
d) Adsorbent
e) Adsorbate
f) Lambert's Law
g) Beer's Law

Q.2	**(a)**	Define Adsorption & explain Freundlich's adsorption isotherms	**05**
	(b)	Differentiate: Physical adsorption and Chemical adsorption.	**05**
	(c)	Give applications of adsorption.	**04**

OR

Q.2	**(a)**	A vaccine contained 1000 units of drug per ml when prepared. The drug decomposed by first order kinetic. The half life of drug is 6.93 hours at room temp. Find out concentration after 23.03 hours.	**05**
	(b)	Explain Jablonski diagram.	**05**
	(c)	State and Explain Faraday's law of electrolysis.	**04**
Q.3	**(a)**	Enlist various methods for determination of order of reaction. Discuss any two methods.	**07**
	(b)	Write a note on enzyme catalysis.	**07**

OR

Q.3	**(a)**	Define quantum yield of a photochemical reactions giving reasons for high and low quantum yield.	**07**
	(b)	What is an adsorption isotherm? Discuss, in detail, Langmuir adsorption isotherm.	**07**

********10***14*****