

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Ph SEM-II Examination- Dec.-2011

Subject code: 220003**Date: 17/12/2011****Subject Name: Pharm Chemistry-II****Time: 10.30 am-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)	What causes surface tension? Describe drop weight method of its determination.	06
	(b)	Explain principle of Oswald's Viscometer.	05
	(c)	Define: Surface tension, Refractive index, optical rotation, Partition co-efficient and Fluorescence.	05
Q.2	(a)	State and explain Raoult's law of dilute solution. Discuss deviation of real solution from the Law.	06
	(b)	Compute the Freezing point depression in 5% w/w glucose aqueous solution. The molecular mass of glucose is 180 gm/mol. Cryoscopic constant of water is 1.86.	05
	(c)	Explain terms: Osmotic Pressure, Reverse Osmosis, Deliquescence, Dipole moment and Heat of Neutralization.	05
Q.3	(a)	State and explain First Law of Thermodynamics.	06
	(b)	The standard Heat of formation of $C_2H_5OH(l)$, $CO_2(g)$ and $H_2O(l)$ are -277.0, -393.5 & -285.5 KJ/mol respectively. Calculate heat of combustion of ethanol. $C_2H_5OH(l) + 3O_2(g) \rightarrow 2CO_2(g) + 3H_2O(l)$	05
	(c)	State and explain Phase Rule. Describe phase diagram of water.	05
Q.4	(a)	What is adsorption? Write note on Gibbs adsorption isotherm.	06
	(b)	Differentiate Physical and Chemical adsorption.	05
	(c)	Discuss pharmaceutical application of adsorption.	05
Q.5	(a)	Define specific conductivity, equivalent conductivity, cell constant.	06
	(b)	Write note on Debye-Huckel theory.	05
	(c)	Explain Lambert-Beer law of Photochemistry and Jablonski diagram.	05
Q.6	(a)	What is order of reaction? Give characteristics of first order kinetic. Hydrolysis of methyl acetate is apparent first order reaction, explain.	06
	(b)	Discuss effect of temperature on Rate of reaction.	05
	(c)	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
Q.7	(a)	Describe working of "Geiger- Muller counter". Enumerate application of radioactivity in pharmacy.	06
	(b)	Write note on Rast's method of molecular weight determination.	05
	(c)	Differentiate Thermo chemistry and photochemistry.	05
