Seat No.: \_\_\_\_\_

Enrolment No.\_\_\_\_

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

B. Pharmacy Sem-II Remedial Examination September 2009

Subject code: 220003 Subject Name: Pharm Chemistry II Date: 08/09/2009 Time: 10:30am-1:30pm **Total Marks: 80** 

Instructions:

- 1. Write seat no. and enrolment no. at given location on question paper.
- **2.** Attempt any five questions.
- 3. Make suitable assumptions wherever necessary.
- 4. Figures to the right indicate full marks.

Q.1	(a)	Answer the followings What is surface tension? Derive equation to determine Surface		06		
		tension by capillary rise method.				
	(b)	Define Refractive Index. How is it determined? Give its <b>06</b>				
	(c)	Define the terms:		04		
	(-)	(i) Specific Optical Rotation (ii) Partition-co	efficient			
		(iii) Reverse Osmosis (iv)Activation I	Energy			
Q.2		Answer the followings				
	<b>(a)</b>	State and explain Raoult's law for dilute solution. Discuss deviations 06 of real solution from the Raoult's law.				
	(b)	The osmotic pressure of a solution containing 1.0 gram of purified <b>0</b> hemoglobin in 50 ml of water is 5.40 mm of Hg at 25 degree centigrade. What is the molecular weight of hemoglobin? P = 0.0821  L atm / mole/K				
	( <b>c</b> )	An aqueous solution freezes at $-3.07$ °C. At what ten this solution boil? (water K <sub>f</sub> =1.86, kb=0.51)	nperature will	04		
Q.3		Answer the followings				
	<b>(a)</b>	What is adsorption? Derive the equation for Langmu	ir's adsorption	06		
	(4)	isotherm.	n o <b>uu</b> oonpuon	00		
(b)		Enumerate the pharmaceutical application of Adsorption in		06		
		pharmacy. Discuss any two.				
	( <b>c</b> )	Differentiate physical and chemical adsorption.		04		
Q.4		Answer the followings				
	<b>(a)</b>	Explain order of reaction and derive equation of first	order kinetic.	06		
	()	Give characteristic of first order kinetics.				
	<b>(b)</b>	Syrup contained 500 mgs of drug / ml when prepared	and after 30	06		
		days was found to contain 400 mgs/ ml. The drug wa	s decomposed			
		by first order kinetic. What is half life of drug?				
	( <b>c</b> )	Out line importance of Rate process in pharmacy.		04		
0.5		Answer the followings				
	(a)	Define specific conductivity and equivalent conducti on Debye-Huckel theory.	vity. Write note	06		

			0.0
	(b)	Compare properties of Radioactive Rays.	06
	(c)	What are the methods of Measurements of Radioactivity? Discuss	04
- ·		any one method.	
Q. 6		Answer the followings	
	(a)	Draw Jablonski diagram .State Beer's Law of photometry. Calculate absorbance corresponding to 0, 10 and 100 % transmission	06
	(h)	Explain the term phase component and degree of freedom with	06
illustration State and explain phase rule			00
	(c)	Discuss phase diagram of system containing phenol-water	04
07	(t)	Answer the followings	04
Q./	(a)	Explain the terms	06
	(a)	(i) Heat of Formation	00
		(i) Heat of solution	
		(ii) Heat of fusion	
		(iii) Heat of Nextralization	
	(1)	(iv) Heat of Neutralization	07
	(D)	application of the thermodynamics in solubility of solid in liquid".	
	(c)	The standard Heat of formation of $C_2H_5OH_{(1)}$ , $CO_{2(g)}$ and $H_2O_{(1)}$	04
	(-)	are -277.0, -393.5 & -285.5 KJ/mol respectively. Calculate heat of	
		combustion of ethanol.	
		$C_2H_5OH_{(1)} + 3O_2()$ 2CO2( $_{(2)}$ + 3H2O ( $_{(1)}$	
		-2-3(1) $-2-2(g)$ $-2(g)$ $-2(g)$	
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