

GUJARAT TECHNOLOGICAL UNIVERSITY**B. Pharmacy Sem-II Remedial Examination Nov/ Dec. 2010****Subject code: 220003****Subject Name: Pharm Chemistry II****Date: 02/12/2010****Time: 10:30am- 01:30pm****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 **any eight** **08**
1. Refractive index
 2. Parachor
 3. Dipole moment
 4. Conductance
 5. Partition Coefficient
 6. Radioactivity
 7. Optical activity
 8. Ebullioscopic constant
 9. Half life.
- (b) What is meant by colligative property? Explain the freezing point depression of solvent upon addition of nonvolatile solute. **05**
- (c) 15gm of unknown substance was dissolved in 1000ml of water at 25°C was found to produce an osmotic pressure of 0.6 atm. What is molecular weight of the substance? $R = 0.0821 \text{ L atm /K}$ **03**
- Q.2** Write a short note on **any four** **16**
1. First law of thermodynamics
 2. Fluorescence
 3. Scintillation counter
 4. Collision theory
 5. Debye Huckel theory
- Q.3** (a) Define viscosity and explain what is meant by viscosity of liquid? Write the units used to express the viscosity. Discuss the Pharmaceutical application of viscosity. **06**
- (b) What is meant by surface tension of liquid? What causes its phenomenon? Discuss the measurement of surface tension by drop formation method. **06**
- (c) Discuss various type of solute- solvent interaction. **04**
- Q.4** (a) Compare properties of alpha, beta and gamma radiations. Discuss the application of radiopharmaceuticals. **06**
- (b) Explain Langmuir and Gibb's adsorption isotherm **06**
- (c) State and explain Beer-Lambert's law of Photometry. Calculate the absorbance corresponding to ten and 100 % transmission. **04**
- Q.5** (a) Explain the order of reaction. Derive the equation for the first order kinetics. Give illustration and characteristics of zero and first order kinetics. **08**
- (b) Explain the difference between the molecularity of reaction and order of the reaction **04**
- (c) A solution of drug contained 500 unit per ml when prepared. It was analyzed after 40 days and found to contains 300 units per ml. assuming that decomposition is first order at what tie will the drug have decomposed to one half of its original. **04**

Q. 6

- (a) Give reason **08**
1. Degradation of the suspension of aspirin is said to be apparent zero order kinetic.
 2. Benzoic acid forms dimer in benzene but not in water.
 3. Real solutions deviate from Raoult's law.
 4. On increasing pressure on water freezing point is lowered.
- (b) Define specific optical rotation. Give the method of determining specific optical rotation. Mention Pharmaceutical application of optical activity. **06**
- (c) Explain ion –induced dipole moment with illustration. **02**

Q.7

- (a) State the limitation of first law of thermodynamics. Explain the second law of thermodynamics in various forms. **06**
- (b) Explain the phase diagram of one component and three phase system. **06**
- (c) Explain following terms **04**
1. Adiabatic process
 2. Heat of Neutralization
 3. Entropy
 4. System
