

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

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharmacy Sem-II examination June 2009

Subject code: 220003

Subject Name: Pharm Chemistry-II

Date: 10/06/2009

Time: 11:30am-2:30pm

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) Comments on the following **06**  
1. Dilution of  $\text{H}_2\text{SO}_4$  with water is an endothermic reaction  
2. Photochemical reaction follows second order kinetics  
3. Liquification process depends on temperature and pressure both  
(b) Derive reaction rate constant, half life and graph of first order reaction kinetics **05**  
(c) Define "Activation energy" of a chemical reaction, how is it determined? **05**
- Q.2** (a) Differentiate between the following **06**  
1. Physical absorption Vs Chemisorption  
2. Homo catalysis Vs hetero catalysis  
3. Photochemical reaction Vs thermochemical reaction  
(b) Write a note on Giger muller counter **05**  
(c) Write applications of the radioactivity **05**
- Q.3** (a) Explain **any three** terms **06**  
1. Degree of freedom 3. Colligative properties  
2. Azeotropic mixture 4. Parachor  
(b) What is adsorption? Explain Langmuir adsorption isotherm **05**  
(c) Write application of adsorptions **05**
- Q.4** (a) Write briefly about various types of thermodynamic processes **06**  
(b) Define thermodynamics. Explain first law of thermodynamics **05**  
(c) Write in detail about enthalpy of the system & molar heat capacities **05**
- Q.5** (a) Define quantum yield of a photochemical reactions giving reasons for high and low quantum yield **06**  
(b) Write about beer-lambert's law for photochemical reaction **05**  
(c) Write about Debye-huckel theory **05**
- Q. 6** (a) What is phase rule? Discuss water system with reference to phase rule **06**  
(b) Define molarity & molality, Calculate the normality of a solution containing 25.2 g of oxalic acid crystals (Molecular weight: 126) dissolved in 500 ml of solution **05**  
(c) State and explain Henry's law **05**
- Q.7** (a) Write about various methods for the estimation of surface tension **06**  
(b) Write in detail about factors affecting viscosity **05**  
(c) Write a note on optical rotation **05**

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