

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  $H_2SO_4$  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 **06**  
for high and low quantum yield
- (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 **06**  
rule
- (b) Define molarity & molality, Calculate the normality of a solution **05**  
containing 25.2 g of oxalic acid crystals (Molecular weight: 126)  
dissolved in 500 ml of solution
- (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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