

**GUJARAT TECHNOLOGICAL UNIVERSITY****B.PHARM- SEM-II-EXAMINATION – JUNE 2012****Subject code: 220003****Date: 16/06/2012****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.

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|-------------|--|-----------|
| <b>Q.1</b>  | (a) What is Matter? What are their states? Give differences between them.  | <b>06</b> |
|             | (b) Define and explain surface tension, optical activity and refractive index.   | <b>05</b> |
|             | (c) Calculate surface tension of ethanol, if density of ethanol is 0.83 and atomic parachor of Carbon is 4.8; Hydrogen is 17.1 and Oxygen is 20.   | <b>05</b> |
| <b>Q.2</b>  | (a) Explain, giving examples: Additive, Constitutive and Colligative properties.   | <b>06</b> |
|             | (b) What do you mean by partition coefficient, freezing point depression and conductance? How they are useful in pharmacy?   | <b>05</b> |
|             | (c) Give differences between ideal and real solutions.   | <b>05</b> |
| <b>Q.3</b>  | (a) Explain, clearly: Thermodynamic, System, Extensive properties and Heat of combustion.  | <b>06</b> |
|             | (b) State and explain First law of thermodynamic with various modifications.   | <b>05</b> |
|             | (c) What is thermo chemistry? How enthalpy of a chemical reaction can be calculated?   | <b>05</b> |
| <b>Q.4</b>  | (a) Explain: Monochromator, Photochemical reaction, Photosensitiser and quantum yield  | <b>06</b> |
|             | (b) Discuss consequences of absorption of light by matter.   | <b>05</b> |
|             | (c) Write pharmaceutical applications of photo chemistry.  | <b>05</b> |
| <b>Q.5</b>  | (a) Differentiate between molecularity and order of reaction.  | <b>04</b> |
|             | (b) Discuss the methods of determination of order of a reaction.   | <b>04</b> |
|             | (c) Derive an equation for first order kinetic.  | <b>04</b> |
|             | (d) Aspirin solution has initial concentration 500 mg/100 ml. After 40 days the concentration becomes 300 mg/100 ml. The reaction follows first order kinetic. Calculate half-life and reaction rate constant. | <b>04</b> |
| <b>Q. 6</b> | (a) Explain terms: (i) Radio activity (ii) Isotopes (iii) Curie (iv) REM (v) Adsorption (vi) Adsorption isotherm (vii) Amphiphile (viii) Absorption  | <b>12</b> |
|             | (b) Write notes on Langmuir Adsorption   | <b>04</b> |
| <b>Q.7</b>  | (a) Write notes on:  | <b>16</b> |
|             | (i) Phase rule   |           |
|             | (ii) Catalyst  |           |
|             | (iii) Theories of reactions  |           |
|             | (iv) Debye Huckel theory   |           |

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