

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BPHARM – SEMESTER II • EXAMINATION – WINTER - 2013

Subject code: 2220002

Date: 20-12-2013

Subject Name: Pharmaceutical Chemistry-II

Time: 10:30 am to 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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|------------|---|-----------|
| Q.1 | (a) Define photochemistry. Explain the Lambert-Beer law in detail. | 06 |
| | (b) Write note on consequences of absorption of light by matter. | 05 |
| | (c) Write basic principle and pharmaceutical application of photochemistry. | 05 |
| Q.2 | (a) Explain Freundlich and Gibbs adsorption isotherm. | 06 |
| | (b) Enlist applications of adsorption. Describe in detail pharmaceutical application. | 05 |
| | (c) Difference between adsorption and absorption. | 05 |
| Q.3 | (a) What is order of a reaction? Derive integrated rate equation for first order reaction. | 06 |
| | (b) Give difference between molecularity of the reactions and order of the reaction. | 05 |
| | (c) What is catalyst? Write a note on characteristic of homogenous and heterogeneous catalyst. | 05 |
| Q.4 | (a) Define Thermodynamics & explain first law of thermodynamics. Explain Carnot cycle. | 06 |
| | (b) What is enthalpy? How enthalpy of chemical reaction can be calculated? | 05 |
| | (c) Give detail of the phase diagram of one component and three phase system. | 05 |
| Q.5 | (a) Enumerate methods for determination of surface tension & describe in detail all methods of surface tension. | 06 |
| | (b) Define viscosity & write units of it. Discuss factors affecting viscosity. | 05 |
| | (c) Write note on dipole moment of chemical constituents. | 05 |
| Q.6 | (a) Discuss colligative properties of solution. Explain the freezing point depression of solvent upon addition of nonvolatile solute. | 06 |
| | (b) Write a note on Debye-Huckel theory. | 05 |
| | (c) Write a note on partition coefficient. Why benzoic acid forms dimer in benzene but not in water. | 05 |
| Q.7 | (a) Define followings (any six): (a) Specific conductance (b) Real solutions (c) Optical rotation (d) Surface tension (e) Density (f) fluorescence (g) Osmotic pressure (h) Deliquescence | 06 |
| | (b) A solution of drug containing 1000 unit per ml when prepared. It was analyzed after 45 days and found to contain 700 units per ml. Assuming that decomposition is first order. Calculate half life of drug. | 05 |
| | (c) Discuss in detail acid-base enzyme catalysis. | 05 |
