

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BPHARM – SEMESTER II • EXAMINATION – SUMMER • 2014

Subject code: 220003

Date: 30-05-2014

Subject Name: Pharm Chemistry II

Time: 02:30 pm to 05:30 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) | Explain following terms: (Any Six) | 4. Phosphorescence | 06 |
| | | 1. Adsorption | 5. Dipole moment | |
| | | 2. Parachore | 6. Optical rotation | |
| | | 3. Radioactivity | 7. Conductance | |
| | (b) | State and explain Henry's law. | | 05 |
| | (c) | Differentiate following: 1. Homogeneous and Heterogeneous catalysis | | 05 |
| | | 2. First order reaction and second order reaction | | |
| Q.2 | (a) | Explain Langmuir and Gibb's adsorption isotherm. | | 06 |
| | (b) | Discuss pharmaceutical applications of adsorption. | | 05 |
| | (c) | Write a note on Geiger-Muller Counter and Scintillation Counter. | | 05 |
| Q.3 | (a) | Explain Phase diagram of 1 component and 3 phase system. | | 06 |
| | (b) | Write a note on Carnot cycle. | | 05 |
| | (c) | The heat of combustion of carbon monoxide at constant volume and at 17°C is -283.3 kJ. Calculate its heat of combustion at constant pressure. (R=8.314 J degree ⁻¹ mole ⁻¹) | | 05 |
| | | $\text{CO}_{(g)} + \frac{1}{2} \text{O}_{2(g)} \longrightarrow \text{CO}_{2(g)}$ | | |
| Q.4 | (a) | Explain following terms giving suitable examples. (Any three) | 3. Adiabatic process | 06 |
| | | 1. Enthalpy | 4. Joule Thomson effect | |
| | | 2. Entropy | | |
| | (b) | Write pharmaceutical applications of photochemistry. | | 05 |
| | (c) | Differentiate: Ideal solution and real solution. | | 05 |
| Q.5 | (a) | Define refractive index. How it is determined? Discuss pharmaceutical applications of refractive index. | | 06 |
| | (b) | 50% of a first order reaction is complete in 23 minutes. Calculate the time required to complete 90% of the reaction. | | 05 |
| | (c) | Define "Viscosity coefficient". Explain principle of ostwald's viscometer. | | 05 |
| Q. 6 | (a) | Draw Jablonski diagram. State Beer's law of photometry. Calculate absorbance corresponding to 0, 10 & 100% transmission. | | 06 |
| | (b) | Explain : Partition coefficient and freezing point depression with suitable example. | | 05 |
| | (c) | Write about various methods for the estimation of surface tension. | | 05 |
| Q.7 | (a) | Enlist various methods for determination of order of kinetics. Discuss any two methods. | | 06 |
| | (b) | Write about Debye-Huckle theory. | | 05 |
| | (c) | Explain characteristics of Enzyme catalysis. | | 05 |
