

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM – SEMESTER – 2- EXAMINATION –WINTER - 2018

Subject Code:2220002

Date: 13/12/2018

Subject Name: Pharmaceutical Chemistry-II (Physical Chemistry)

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) | What is Refractive Index? Give its importance in Pharmacy. Enlist the factors affecting refractive index. | 06 |
| | (b) | Define: Viscosity and fluidity. Describe principle of Ostwald's viscometer. | 05 |
| | (c) | Discuss the measurement of surface tension by drop formation method. | 05 |
| Q.2 | (a) | Define: Fluorescence, Phosphorescence and Chemiluminescence. | 06 |
| | (b) | Draw a Jablonski diagram & explain consequences of Light absorption. | 05 |
| | (c) | Define: photochemistry. Explain Lambert – Beer law. | 05 |
| Q.3 | (a) | Explain in detail Debye-Huckel theory. | 06 |
| | (b) | Define & Enlist Colligative Properties. Explain any two in detail. | 05 |
| | (c) | Define: Molarity and Normality. Explain Henry's law in brief. | 05 |
| Q.4 | (a) | State & explain first law of Thermodynamics with various modifications. | 06 |
| | (b) | Enlist various methods for the determination of order of reaction. | 05 |
| | (c) | Define enthalpy. How enthalpy of a chemical reaction can be calculated? | 05 |
| Q.5 | (a) | Differentiate between: (i) Adsorption and Absorption
(ii) Physical adsorption and Chemical adsorption. | 06 |
| | (b) | Explain in detail Langmuir Adsorption isotherms. | 05 |
| | (c) | Discuss applications of adsorption in pharmacy. | 05 |
| Q. 6 | (a) | State and explain phase rule. Describe phase diagram of water. | 06 |
| | (b) | Derive Reaction rate constant & half-life for first order reaction kinetics. | 05 |
| | (c) | Write a note on "The Carnot Cycle". | 05 |
| Q.7 | (a) | State and explain Raoult's law of dilute solution. Discuss deviation of real solution from the Law. | 06 |
| | (b) | Write a note on Parachlor. | 05 |
| | (c) | Discuss Acid-base Enzyme Catalysis in detail. | 05 |
