

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER- 2 EXAMINATION – SUMMER -2019

Subject Code: 2220002**Date: 31-05-2019****Subject Name: Pharmaceutical Chemistry-II (Physical Chemistry)****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) | What is order of a reaction? Derive integrated rate equation for zero order reaction. | 06 |
| | (b) | Explain the collision theory with its limitations. | 05 |
| | (c) | Write a note on Parachor. | 05 |
| Q.2 | (a) | Define quantum efficiency. Explain in detail causes of high & low quantum yield with examples. | 06 |
| | (b) | Write a note on One and two component systems. | 05 |
| | (c) | What is the basic principle of Joule –Thomson effect? | 05 |
| Q.3 | (a) | Define: Thermodynamics. Explain first law of thermodynamics. | 06 |
| | (b) | Write a note on partition coefficient. Why benzoic acid forms dimer in benzene but not in water. | 05 |
| | (c) | Explain the laws of photochemistry. | 05 |
| Q.4 | (a) | Write a note on homogeneous and heterogeneous catalyst with suitable examples. | 06 |
| | (b) | What is Raoult's law? Describe the deviations from Raoult's law. | 05 |
| | (c) | Define: surface tension. What are its units? Explain drop weight method for the determination of the surface tension. | 05 |
| Q.5 | (a) | Define: Adsorption. Explain Freundlich Adsorption isotherms. | 06 |
| | (b) | Define: Molarity and Normality. Explain state and limitation of Henry's law. | 05 |
| | (c) | Write a note on Jablonski diagram. | 05 |
| Q.6 | (a) | What is enthalpy? How enthalpy of chemical reaction can be calculated? | 06 |
| | (b) | Define: Colligative property. Describe in detailed lowering of the Vapour pressure. | 05 |
| | (c) | Explain "Beer's Lambert's law of photochemistry". | 05 |
| Q.7 | (a) | Write a note on Debye-Huckle theory. | 06 |
| | (b) | Write a note on "Acid- Base Enzyme Catalysis". | 05 |
| | (c) | Describe different methods to determine the order of reaction in brief | 05 |
