

Seat No.: _____

Enrolment No. _____

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

Subject Code: 2220002**Date: 18-12-2019****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.

- Q.1** (a) Explain the terms surface tension. Give unit, application and methods for determination of surface tension. **06**
(b) What is viscosity? Write a note on methods for measurement of viscosity. **05**
(c) Give difference of followings. **05**
(i) Colligative properties and constitutive properties,
(ii) Adsorption and absorption
- Q.2** (a) What is solution? Described difference between ideal solution and real solution and described debye-huckel theory for solution. **06**
(b) State and explain raoult's law of dilute solution. **05**
(c) Define the terms: (i) Conductance, (ii) equivalent conductance, (iii) Partition co-efficient, (iv) dipole moment, (v) optical rotation **05**
- Q.3** (a) What is enthalpy? Derive chemical reaction of enthalpy. **06**
(b) Define thermodynamics and described the first law of thermodynamics. **05**
(c) What is the basic principle of Joule –Thomson effect? **05**
- Q.4** (a) Define adsorption and described application of adsorption in pharmacy. **06**
(b) Derived and described Langmuir Adsorption isotherms. **05**
(c) Explain: Fluorescence, Phosphorescence and Chemiluminescence. **05**
- Q.5** (a) State and explain Lambert-beer law for photochemistry. **06**
(b) Draw and explain the Jablonski diagram. **05**
(c) Which processes are takes place when the activated molecule returns to the ground state by eliminating energy at each level. **05**
- Q. 6** (a) Explain order of reaction and pseudo order of reaction. Derive integrated rate equation for first order reaction. **06**
(b) Define half-life of a reaction. Prove that half-life of first order reaction is independent of the initial concentration. **05**
(c) Write note on Acid-base Enzyme Catalysis **05**
- Q.7** (a) Differentiate the following. **06**
(i) Homocatalysis & Heterocatalysis, (ii) Molecularity of a reaction and order of a reaction, (iii) Chemisorptions and physical adsorption.
(b) What is Phase-rule? Describe phase diagram of water. **05**
(c) Described One and two compartment systems. **05**
