

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Ph. – SEMESTER III – • EXAMINATION – WINTER -2020

Subject Code: BP302TP**Date: 04/03/2021****Subject Name: Physical Pharmaceutics-I****Time: 02:30PM TO 04:30PM****Total Marks: 54****Instructions:**

1. Attempt any THREE questions from Q-1 to Q-6.
2. Q.7 is compulsory to attempt.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

- Q.1** (a) Define real and ideal solution. Give the derivation of Raoult's law with its application. **06**
(b) Give a brief note on solubility of gas in liquid. **05**
(c) Discuss Distribution law with its limitation and application. **05**
- Q.2** (a) Write a note on liquid crystals. **06**
(b) Discuss two component system containing phenol water liquid phases. **05**
(c) Define Polymorphism. Write its type with importance in pharmaceutical industry. **05**
- Q.3** (a) Give a brief note on eutectic mixture in context with Thymol - Salol system. **06**
(b) Explain solute – solvent interaction with ideal solubility parameter. **05**
(c) Define: Refractive index, optical rotation, dielectric constant, dipole moment, dissociation constant **05**
- Q.4** (a) Define surface tension. Discuss Du-Nouy Ring method in detail. **06**
(b) Write a brief note on spreading co-efficient. **05**
(c) Give the difference between surface tension and interfacial tension. Write a brief note on HLB scale. **05**
- Q.5** (a) Define complexation. Discuss methods of analysis of complexes. **06**
(b) Give the classification of complexation and write importance of complexation. **05**
(c) Write a brief note on protein binding. **05**
- Q.6** (a) Discuss the methods to determine pH of buffers. **06**
(b) Define buffer capacity. Write the application of buffers in pharmaceuticals. **05**
(c) Explain isotonicity with its importance. How isotonicity is maintained in buffer solution. **05**
- Q.7** (a) Write the difference between crystalline and amorphous form of solid. **06**
OR
(a) Explain aerosol with its application in Pharmaceutical industry. **06**
OR
(a) Define surface free energy. Write a note on surface active agents. **06**
