

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.

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|-------------|---|-----------|
| 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 |
