

**GUJARAT TECHNOLOGICAL UNIVERSITY****B.Ph. - SEMESTER-III • EXAMINATION – SUMMER -2022****Subject Code: BP302TP****Date:03/09/2022****Subject Name: Physical Pharmaceutics -I****Time:02:30pm to 05:30pm****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) Classify Complexes in detail. 06  
(b) Explain term Complexation with its application. 05  
(c) Write a brief note on Protein Binding. 05
- Q.2 (a) Explain surface tension and its methods for measurement. 06  
(b) Define and classify surfactant with its application. 05  
(c) Explain HLB scale. Write methods for determination of HLB. 05
- Q.3 (a) Write a note on solubility and factors affecting solubility of drug. 06  
(b) Discuss Ideal solubility Parameter briefly. 05  
(c) What Do you mean by Upper Consulate Temperature? How it is determined? 05
- Q.4 (a) Explain Nernst distribution law with limitation and application. 06  
(b) Give a note on Adsorption Isotherm. 05  
(c) Define 1. Chelates 2. Surface Free Energy 3. Spreading Coefficient 05  
4. Solvation 5. Eutectic Mixtures.
- Q.5 (a) What are Liquid crystals? Explain its types. 06  
(b) Explain briefly about changes in matter with the help of phase diagram. 05  
(c) What is Polymorphism? Explain its type with application. 05
- Q. 6 (a) Define and discuss Refractive Index with its method for determination. 06  
(b) Write a note on Dissociation constant and Dipole moment. 05  
(c) Explain Optical rotation with methods for determination. 05
- Q.7 (a) Explain methods for adjustment of Tonicity. 06  
(b) What is pH? What is pH scale? What are methods for determination of it? 05  
(c) Give short note on buffers used in pharmaceutical and biological systems. 05

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