

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.PHARM - SEMESTER- 3 EXAMINATION – SUMMER -2019**

**Subject Code: BP302TP****Date: 30-05-2019****Subject Name: Physical Pharmaceutics I****Time: 02:30 PM TO 05:30 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) Describe Raoult's law with its application. **06**  
(b) Define following terms **05**  
(i) Solution (ii) Solute (iii) Solvent (iv) Saturated solution (v) supersaturated solution.  
(c) Enumerate factors affecting solubility and discuss common ion effect in detail. **05**
- Q.2** (a) Discuss the factors affecting solubility of gas in liquids. **06**  
(b) What is polymorphism? Discuss it with suitable examples. **05**  
(c) Briefly explain (i) Glassy state and (ii) Liquid crystals. **05**
- Q.3** (a) Explain sublimation with suitable diagram. **06**  
(b) What is the significance of specific rotation in pharmacy? **05**  
(c) Write a note on Du Nouy Tensiometer. **05**
- Q.4** (a) Explain spreading coefficient. **06**  
(b) Give the range of HLB value of (i) Detergents (ii) wetting agents (iii) o/w emulsifying agents (iv) Antifoaming agents (v) Solubilizing agents **05**  
(c) What is physisorption? Differentiate physisorption and chemisorptions. **05**
- Q.5** (a) Explain the significance of protein binding. **06**  
(b) Write a short note on Clathrates. **05**  
(c) Write a short note on ligands. **05**
- Q.6** (a) Classify the complexes and explain chelates in detail. **06**  
(b) Explain Sorensen's pH scale. **05**  
(c) Write a note on pH determination. **05**
- Q.7** (a) Explain Henderson-Hasselbalch equation. **06**  
(b) What are the methods of adjusting tonicity? Discuss freezing point method in detail. **05**  
(c) Explain the limitation of distribution law. **05**

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