

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BPHARM – SEMESTER II • EXAMINATION – SUMMER • 2014**

**Subject code: 2220001****Date: 06-06-2014****Subject Name: Physical Pharmacy****Time: 02:30 pm - 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) Write a note on: Plastic flow, Pseudoplastic flow and Dilatant flow. **06**  
(b) Explain with figure cup and bob viscometer. **05**  
(c) Define and explain: Angle of repose and Carr's Index with their pharmacopoeial specification. **05**
- Q.2** (a) Define emulsion with its types. Explain the theory behind stability of emulsion. **06**  
(b) Explain protective colloidal action in details. **05**  
(c) Define suspension. Write a note on factor affecting stability of suspension. **05**
- Q.3** (a) Define and Explain phase rule. Discuss phase diagram for one component system. **06**  
(b) Discuss: Liquid crystalline state. **05**  
(c) Explain binding force between molecules. **05**
- Q.4** (a) Define micromeritics. Enumerate different methods and commonly used measurement of particle size determination. Describe briefly optical microscopy. **06**  
(b) Explain method for determining particle surface area. **05**  
(c) Discuss porosity and packing arrangement of powder with application of micromeritics. **05**
- Q.5** (a) Discuss spreading coefficient. Derive its equation. **06**  
(b) Explain: Wetting phenomena and Electrical double layer. **05**  
(c) Enumerate the methods for the determination of surface and interfacial tension. Explain capillary rise method. **05**
- Q. 6** (a) Give difference between Lyophilic colloids and Lyophobic colloids. Discuss association colloids. **06**  
(b) Describe solubility of gases in liquids. **05**  
(c) Differentiate ideal and real solution. Explain the influence of foreign substances in solubility of liquids in liquids. **05**
- Q.7** (a) Define complexation. Explain organic molecular complexes. **06**  
(b) Give the application of complexes in dosage forms. **05**  
(c) Give factors affecting powder flow. **05**

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