

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Ph SEM-II Examination- Dec.-2011

Subject code: 220006

Date: 24/12/2011

Subject Name: Physical Pharmacy

Time: 10.30 am-01.30 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) What is thixotropy and antithixotropy? Draw different types of thixotropic and antithixotropy curves and explain the mechanism for their behavior with suitable examples. **06**
- (b) Classify various instruments for measurement of viscosity. Describe any one viscometer to find out viscosity of non Newtonian fluids. **05**
- (c) Explain non Newtonian type of flow with rheograms, mechanism and suitable examples. **05**
- Q.2** (a) What is spreading coefficient? Derive its equation. **06**
- (b) Write a note on surface active agents. **05**
- (c) Discuss the electric properties of interfaces. **05**
- Q.3** (a) What is meant by controlled flocculation? Discuss the various means by which controlled flocculation can be achieved **06**
- (b) What is meant by sedimentation parameters? How are they evaluated? **05**
- (c) Explain protective colloidal action in detail. **05**
- Q.4** (a) Enumerate the derived properties. How are they evaluated? **06**
- (b) Enlist various methods for determination of particle size and explain coulter counter method in detail. **05**
- (c) Discuss the instability of an emulsion. **05**
- Q.5** (a) What are association colloids? Mention the mechanism of formation of micelles. **06**
- (b) Explain in detail distribution of solutes between immiscible solvents. **05**
- (c) Write a note on HLB scale. **05**
- Q. 6** (a) Discuss two component systems containing liquid phases giving examples. **06**
- (b) Discuss the structure, properties and significance of liquid crystals. **05**
- (c) Write a note on polymorphism. **05**
- Q.7** (a) Discuss the methods of adjusting tonicity and pH of pharmaceutical systems. **06**
- (b) What is buffer capacity? How it is calculated. **05**
- (c) A sample of silica was analyzed by the microscopy method, and following data were collected. calculate length number mean diameter and surface length mean diameter **05**

Size range (μm)	0.50 -1.00	1.00-1.50	1.50-2.00	2.00-2.50	2.50-3.00
Frequency (n)	2	10	22	54	17
