

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER II • EXAMINATION – WINTER 2015

Subject Code: 220006

Date: 21/12/2015

Subject Name: Physical Pharmacy

Time: 2.30 pm to 5.30 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) Write a short note on Gel-Sol-Gel Transformation. **05**
- (c) Give the working principle of cup and bob viscometer with a labelled diagram. **05**
- Q.2** (a) Discuss the capillary rise method for measuring surface tension. **06**
- (b) Write a short note on Spreading Coefficient. **05**
- (c) Discuss the electric properties of interfaces. **05**
- Q.3** (a) Explain the particle volume measurement by coulter counter method. **06**
- (b) Explain derived properties of powders. **05**
- (c) Define Reynolds number. Write Stokes' equation. What are the applications in pharmacy? **05**
- Q.4** (a) What are association colloids? Mention the mechanism of formation of micelles. **06**
- (b) Write a note on Controlled Flocculation. **05**
- (c) Write a note on Hydrophilic Lipophilic Balance. **05**
- Q.5** (a) State the phase rule. Explain Phase equilibria for system containing two components. **06**
- (b) Write a note on polymorphism. Describe its importance with example. **05**
- (c) What are kinetic properties of colloids? **05**
- Q. 6** (a) Discuss the effect of pressure, temperature and chemical reaction for solubility of gasses in liquids. **06**
- (b) Explain Buffer Equation. What is buffer capacity? How it is calculated. **05**
- (c) Write a note on physical stability of emulsion. **05**
- Q.7** (a) Differentiate ideal and real solution. Explain the influence of foreign substances in solubility of liquids in liquids. **06**
- (b) Enlist the methods for adjusting tonicity and pH. Explain any one. **05**
- (c) Define suspension and differentiate between flocculated & deflocculated suspension. **05**
