

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharmacy Sem-II examination June 2009

Subject code: 220006

Date: 15/06/2009

Subject Name: Physical Pharmacy

Time: 11:30am-2:30pm

Total Marks: 80

Instructions:

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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|-------------|--|-----------|
| Q.1 | (a) Define Polymorphism. Discuss the significance of Polymorphism in Pharmacy with example. | 06 |
| | (b) Discuss the two component systems containing solid and liquid Phases. | 06 |
| | (c) Write a note on liquid Crystals. | 04 |
| Q.2 | (a) What is Buffer capacity? How it is calculated? | 07 |
| | (b) Write a note on Pharmaceutical Buffer. | 05 |
| | (c) Calculate the pH of 0.02 M Ba(OH) ₂ . | 04 |
| Q.3 | (a) Write in detailed note on Non-Newtonian systems. | 05 |
| | (b) Classify various viscometers. Describe two viscometer with diagram to find out viscosity of Non-Newtonian fluids. | 06 |
| | (c) What a note on : Plastic and Pseudoplastic flow. | 05 |
| Q.4 | (a) Differentiate various types of colloidal dispersion system and give the application of colloids in pharmacy. | 07 |
| | (b) Define Suspension. Write a note on factors affecting stability of Suspension. | 05 |
| | (c) Discuss the instability of emulsions. | 04 |
| Q.5 | (a) Discuss the method of determining the particle volume in detail. | 06 |
| | (b) Discuss the porosity and Kelvin equation with their significance in pharmacy. | 06 |
| | (c) A sample of calcium carbonate having density 2.8 g/cm ³ , allow to settle under acceleration of gravity ($g_c = 980 \text{ cm/sec}$) the rate of setting (v) is $14.6 \times 10^{-3} \text{ cm/sec}$, the density (ρ) of water is 1.00 g/cm^3 and viscosity (η) is 0.01 poise. Calculate the Stoke's Diameter. | 04 |
| Q. 6 | (a) Explain the Surface and Interfacial tensions. | 05 |
| | (b) What is spreading Coefficient? Derive its equation. | 06 |
| | (c) Describe the method of calculation of HLB by different techniques. | 05 |
| Q.7 | (a) Write a note on solubility of gases in liquid. | 05 |
| | (b) Write a note on law of distribution. | 06 |
| | (c) Write a note on physical stability of emulsion. | 05 |
