

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BP Pharm – SEMESTER II • EXAMINATION – WINTER • 2014

Subject code: 2220001

Date: 10-12-2014

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.**

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|-------------|--|-----------|
| Q.1 | (a) Write about the Nernst and Zeta potential and give its importance in pharmaceutical systems. | 06 |
| | (b) Discuss the Viscoelasticity in detail. | 05 |
| | (c) Explain Non Newtonian flow with rheogram, mechanism and Explain with suitable example. | 05 |
| Q.2 | (a) Explain Sedimentation Parameter of suspension in detail. | 06 |
| | (b) Explain the concept of DLVO theory along with energy curve and how this theory is applied in stabilizing the colloidal Dispersion. | 05 |
| | (c) Write mechanism and applications of drug – caffeine complexes. | 05 |
| Q.3 | (a) Enlist the different type of densities of powder. Write the experimental method for the determination of any one of them. | 06 |
| | (b) Classify the methods use for determination of surface area. Explain air permeability method in detail with diagram. | 05 |
| | (c) Describe Stoichiometric ratio in the analysis of Complexation. Describe one method for the determination of the same. | 05 |
| Q.4 | (a) How will you determine the Rheological Properties? Explain Cup and bob Viscometer in detail. | 06 |
| | (b) Classify the method of liquefaction of gases and Explain Linde's method in detail. | 05 |
| | (c) Write note on Thixotropy. | 05 |
| Q.5 | (a) Describe the Process of micelle Solubilization. Explain its application in pharmacy with suitable example. | 06 |
| | (b) Discuss the Capillary rise method for measurement of Surface Tension. | 05 |
| | (c) Explain the physical instability of emulsion. | 05 |
| Q. 6 | (a) Derive the equation for protein binding to draw Scatchard plot with its limitations. | 06 |
| | (b) Give distribution of substances undergoing ionic dissociation and ionic association. | 05 |
| | (c) Write a note on Solute solvent Interaction. | 05 |
| Q.7 | (a) Explain HLB value. Describe the method of calculation of HLB by different technique. | 06 |
| | (b) Write a note on lyophilization technique in detail. | 05 |
| | (c) Explain the structure properties and significant of liquid crystals. | 05 |
