

**II B.Pharmacy I Semester Supplementary Examinations, Jan - 2015
PHYSICAL PHARMACEUTICS****Time: 3 hours****Max Marks: 75****Answer any FIVE Questions
All Questions carry equal marks**

1. Explain the applicability of Nernst distribution law in several areas of pharmaceutical field. [15]
2. (a) List out the various methods of analysis of complexes and discuss about any one method for the determination of their stability constant and stoichiometric ratios.
(b) Classify inclusion complexes. Describe the nature of intermolecular interactions with suitable examples. [8+7]
3. (a) A drug product is known to be ineffective after it has decomposed 30%. The original concentration of the sample was 5.0 mg/ml. The concentration was found to be 4.2 mg/ml after 20 months later, assuming that the decomposition first order, what should be the expiration time on the label? What is the half life of this product?
(b) Define rate, order and molecularity of a chemical reaction. Give the differences between the zero and first order reactions and give two examples each? [8+7]
4. (a) Determine the surface tension of 0.5% solution of a surfactant that has density of 1.012g/cm³ and which rises to a height of 3.4 cm in a capillary tube having an inside diameter of 0.05 cm?
(b) What is contact angle? Describe its significance in the wetting of solids by liquids? [8+7]
5. (a) What is micromeritics? Discuss about its importance in pharmacy.
(b) List out various methods of determination of particle size of powders. Add a note on equivalent spherical diameters. [7+8]
6. (a) With a neat labelled diagram explain about thixotropy.
(b) Discuss the pharmaceutical applications of thixotropy in pharmacy. [7+8]
7. (a) Explain the concept of Donnan membrane equilibrium with a suitable example and equation.
(b) Explain the method of determination of molecular weight of polymers using the principles of viscosity. [8+7]
8. Explain the factors influencing physical stability of suspensions. Write about its significance. [15]

