Code No: B2103/R10 **R10**

II B.Pharmacy I Semester Supplementary Examinations, Apr/May 2013
PHYSICAL PHARMACEUTICS

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. If 0.0160 g of oxygen dissolves in 1 litre of water at a temperature of 25^0c and at oxygen pressure of 300 mm Hg. Calculate a) σ and b) the Bunsen coefficient, α c) How many grams of oxygen can be dissolved in 250 ml of aqueous solution when the total pressure above the mixture is 760 mm Hg. The partial pressure of oxygen in the solution is 0.263 atm and the temperature is 25^0c. [15]

2. Write a note on
   (a)Method of continuous variation
   (b)pH Titration method. [8+7]

3. (a) The K value for the degradation reaction of a formulation at different temperature are at 20^0, 0.02 $hr^{-1}$and at 40^0, 0.1254hr^{-1}. Calculate energy of activation and Arrhenius factor.
   (b) Give the equation and graphical representation of zero order, first order and second order of reaction? [8+7]

4. (a) How will you determine the surface tension by capillary rise method?
   (b) What are the various factors that affect adsorption? State Freaundlich adsorption isotherm and explain how would you verify it experimentally? [7+8]

5. (a) What is particle number? Derive an equation to determine particle number of a powder using volume mean diameter.
   (b) How is flow of powders important in manufacturing of tablets? What is the problem we encounter in tablets manufacture with poor flowing granules? How do you overcome it? [7+8]

6. (a)Discuss the principle and working of cone and plate viscometer.
   (b)Discuss the importance of rheology in pharmacy. [8+7]

7. Enumerate different types of colloids giving their salient features and examples. [15]

8. Describe and explain the sedimentation parameters? How are they evaluated? [15]

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