

Code No. 7219 / S

**FACULTY OF PHARMACY****B. Pharmacy 3/4 I – Semester (Supplementary) Examination, March 2014****Subject : Physical Pharmacy – I****Time : 3 hours****Max. Marks : 70****Note : Answer all questions. All questions carry equal marks.**

- 1 a) State Gibb's phase rule. Explain the phase diagram of one component system. 7  
b) What is polymorphism? Write its significance with suitable examples. 7  
**OR**
- c) i) Differential scanning calorimetry 7  
ii) Liquid crystalline state and its applications. 7
- 2 a) State and explain first law of thermodynamics. 7  
b) Define and explain Hess's law of constant summation. Write its applications. 7  
**OR**
- c) State and explain second law of thermodynamics. 7  
d) Explain free energy function and applications. 7
- 3 a) How do you measure osmotic pressure. 7  
b) Explain activity and activity coefficient. 7  
**OR**
- c) State Raoult's law. Explain positive and negative deviations of Raoult's law. 7  
d) What are colligative properties? Explain the choice of colligative properties in molecular weight determination. 7
- 4 a) Explain cryoscopic method and sodium chloride equivalent method for adjusting isotonicity. 7  
b) Explain the influence of buffer capacity and pH on tissue irritation. 7  
**OR**
- c) Derive buffer equation for a weak acid. 7  
d) Write Van Slyke's equation for buffer capacity and maximum buffer capacity and its applications. 7
- 5 a) Write about :  
i) Ion sensitive electrode 7  
ii) Measurement of pH using glass electrode 7  
**OR**
- b) Explain in detail different types of electrodes. 10  
c) Write the applications of redox potentials in pharmacy. 4

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