

**I B.Pharmacy I Semester Supplementary Examinations, Aug. 2015**  
**PHYSICAL PHARMACY-I**

**Time: 3 hours**

**Max Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. Explain how real gases show ideal behaviour at extremely low pressures. Write about its significance. [15]
2. (a) What are Miller indices? Illustrate their use and applications.  
(b) Explain the term 'pseudomorphism' with suitable examples. [8+7]
3. Define thermodynamic equilibrium. Explain the criteria for equilibrium. [15]
4. What the clausius equation says and derive the equation based on the clausius statement. [15]
5. (a) Define dipole moment. Explain correlation with the insecticidal activity.  
(b) Describe the principle, construction and working of Abbe's refractometer. [7+8]
6. (a) Explain Dielectric constant and Optical rotation.  
(b) Explain Dipole moment and write its uses in pharmacy. [7+8]
7. (a) Derive an expression for calculation of molecular weight of non-volatile solute by freezing point depression method.  
(b) A sample of camphor used in the RAST camphor method has a melting point of  $176.5^{\circ}\text{C}$ . the melting point of a solution containing 0.522gm of camphor and 0.0386gm of unknown substance was  $158.8^{\circ}\text{C}$ . find the molecular weight of the unknown substance. Kf of camphor is 37.7. [7+8]
8. (a) Explain the phenomenon 'Osmosis'. Write their applications indetail.  
(b) Explain the experimental method for the determination of molecular mass of a solute using vapour pressure method. [7+8]

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