Code No: B1107/R10 **R10**

I B.Pharmacy I Semester Regular Examinations, February 2013
PHYSICAL PHARMACY-I

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Claude's process is more efficient than Linde's process for liquefaction of gases. Explain.
   (b) What is meant by liquefaction of gases? Write its significance [8+7]

2. Define CST and miscibility temperature. Write about its significance. [15]

3. Explain and derive an expression for the maximum work done when an ideal gas expands isothermally and reversibly. [15]

4. Describe the characteristics of a spontaneous reaction with examples. Explain the thermodynamic state functions for such processes. [15]

5. Describe the below optical properties in the elicidation of the chemical structure with two examples.
   (a)Refractive index.
   (b) Optical rotation. [8+7]

6. (a) Define refractive index. Write their applications and factors influencing.
   (b) Define Dipole moment. Explain the mathematical treatment and write its applications. [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 176.5^0C. the melting point of a solution containing 0.522gm of camphor and 0.0386gm of unknown substance was 158.8^0C. find the molecular weight of the unknown substance. Kf of camphor is 37.7. [7+8]

8. (a) Explain how molecular mass is determined from freezing point depression method?
   (b) Define Osmosis, Semipermeable membrane and explain laws of osmotic pressure. [7+8]

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