

Total No. of Questions : 6]

SEAT No. :

P3149

[Total No. of Pages : 2

[5245]-301

**Second Year B. Pharmacy (Semester - III)**

**PHYSICAL PHARMACEUTICS - I**

**(2013 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Answers to the two sections should be written in separate answer books.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*

**SECTION - I**

**Q1)** Attempt any one

Explain the phase diagram for two component system containing solid and liquid phases, add a note on solid dispersions. **[10]**

OR

What are the different types and properties of solutions? Explain Boiling point elevation and Freezing point depression as colligative properties of nonelectrolyte solution.

**Q2)** Attempt any Five

**[15]**

- a) Explain the VanderWaal equation for real gases.
- b) Explain lowering of vapor pressure as colligative property.
- c) Write the principle of two phase system aerosol.
- d) Explain the Equivalent Conductance of Strong and Weak Electrolytes.
- e) Explain the Linde's method for liquefaction of gases.
- f) A solution containing 7.5g of nonelectrolyte solute dissolved in 50g of water has a boiling point of 101.9°C. What is the molecular weight of sucrose if ebullioscopic constant ( $K_b$ ) for water is 0.51
- g) Phase diagram for two component system containing liquid phases.

**P.T.O.**

**Q3) Write short notes (Any two) [10]**

- a) Van't Hoff and Morse Equations for Osmotic Pressure.
- b) Gibbs phase rule and its pharmaceutical applications.
- c) One component system.
- d) Conductometric titration.

**SECTION - II**

**Q4) Attempt any one**

Discuss Crystal Parameters and methods of Crystal analysis. [10]

OR

State Nernst Distribution law along with factors affecting and applications.

**Q5) Attempt any Five [15]**

- a) Define solubility parameter, Solubility and Saturation solubility.
- b) Give examples of different polymorphs.
- c) Give significance of glass transition temperature in Pharmaceuticals.
- d) Explain factors affecting solubility of gases in liquids.
- e) Define and differentiate between Polymorphism and glass transition temperature.
- f) Discuss effect of various parameters on solubility.
- g) Discuss solubility and permeability co-relationship in detail.

**Q6) Write short notes (Any two) [10]**

- a) Methods of Polymorph Detection.
- b) Solubility of electrolytes.
- c) Effect of temperature on Molecular behavior.
- d) Crystallization.

