

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.

