

B.Pharm. Sixth Semester (C.B.S.) Examination
PHARMACEUTICS—VI (Physical Pharmacy)
Paper—1

Time : Three Hours]

[Maximum Marks : 80

N.B. :— (1) Question No. 1 is compulsory.(2) Solve any **four** questions from remaining.

(3) Draw neat labelled diagram wherever necessary.

(4) Assume suitable data wherever necessary.

1. Solve any **five** of the following : 4×5=20
 - (a) Why addition of sodium oleate to phenol water system lowers the critical solution temperature ?
 - (b) Define glass transition temperature (T_g). Explain effect of cross linking on T_g of polymer.
 - (c) What is active and passive diffusion ? What is osmosis and ultrafiltration ?
 - (d) Define solubility according to I.P.
 - (e) Define rate, order and molecularity of a reaction. What do you understand by pseudo-order reaction ?
 - (f) What are bulges and spurs in the hysteresis loop ?
 - (g) What are complexes ? Give one example.
2. Derive an equation for solubility of non-ionic solids in liquids. 15
3. Explain steady state diffusion and derive Ficks First and Second law of diffusion. Add a note on measurement of diffusion coefficient. 15
4. What are Non-Newtonian systems ? Explain their types and comment briefly on thixotropy. 15
5. (a) What is the influence of pH on solubility of weak acids and weak bases ? 8
 (b) Give applications of polymers in Drug delivery systems. 7
6. (a) Write principle, working, disadvantages and modifications of Cup and Bob viscometer. 8
 (b) Explain metal ion complexes. 7
7. (a) How the stoichiometric ratio and stability constant is determined by solubility and distribution method ? 8
 (b) How the half-life and shelf-life of drugs can be calculated ? 7