

B.Pharm. Sixth Semester (C.B.S.) Examination
PHARMACEUTICS—VI (Physical Pharmacy)
Paper—1 (6T1)

Time : Three Hours]

[Full Marks : 80

N.B. :— (1) Question No. 1 is compulsory.

- (2) Solve any **FOUR** questions from the remaining.
- (3) Draw neat labelled diagram wherever necessary.
- (4) Discuss the reaction, mechanism wherever necessary.
- (5) Use of electronic calculator is permitted
- (6) Assume suitable data wherever necessary

1. Solve any **FIVE** questions of the following :

- (a) Comment on order and molecularity in reaction.
- (b) Explain the concept of ideal solubility.
- (c) What is glass-rubber transition temperature ?
- (d) What is plug flow ? How it is avoided ?
- (e) Comment on solubility of slightly soluble electrolytes.
- (f) How temperature effects rate of reaction.

(g) Draw well labelled diagram of USP dissolution apparatus.

5×4=20

2. (a) Derive the Scatchard-Hildebrand equation for non-ideal solutions.

8

(b) Enlist various multipoint viscometers. Describe in detail cup and bob viscometer.

7

3. (a) Derive Higuchi's equation for controlled release system.

8

(b) Discuss the effect of ionic dissociation and molecular association on partitioning.

7

4. (a) What are non Newtonian systems ? Explain plastic and dilatant flow systems.

8

(b) Comment on accelerated stability studies.

7

5. (a) Classify complexes. Write in brief about organic molecular complexes. 8
(b) Compare and explain various mechanical properties of polymer. 7
6. (a) How will you determine average molecular weight of polymer based on viscosity of polymer. 8
(b) Derive Hixon-Crowell cube root law for dissolution of drug. 7
7. Write short notes on any **THREE** :
- (a) Pharmaceutical application of polymer.
(b) Effect of temperature on rate of reaction.
(c) pH titration method for determination of complex.
(d) Application of distribution phenomenon in pharmacy. 5×3=15