KNT/KW/16/6570

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 dialatant 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