TKN/KS/16–6999

Sixth Semester Examination for the Degree of Bachelor of Pharmacy

PHARMACEUTICS–VI

6T1

(Physical Pharmacy)

Time : Three Hours] [Max. 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 the following (any **four**) :—

(a) Derive the rate constant for a first order reaction.

(b) Discuss Ficks law of diffusion and Noyes Whitney equation.

(c) Give the pharmaceutical applications of polymers.

(d) Discuss the effect of ionic dissociation on partition coefficient.

(e) Discuss the type of flow associated with polymeric solutions and bentonite magma.

(f) Discuss about glass transition temperature.

(g) What are inclusion complexes ? 5×4=20

2. (a) Discuss in detail the Scatchard – Hildebrand equation expressing solubility of solids in liquids. 8

(b) Describe the mechanical properties of polymers. 7

3. (a) Discuss in detail accelerated stability analysis. 8

(b) Derive the Higuchi's equation for dissolution of solids. 7

4. Give a detailed account on thixotropy. Also add a note on multipoint viscometer. 15

5. Discuss the different methods used for analysis of complexes. 15

6. Define rate, order and half – life of a reaction. Discuss in detail various factors affecting the rate of a reaction. 15

7. Write short notes (any **two**) :—

(1) Solubility of liquids in liquids

(2) Polymer solutions

(3) Measurement of diffusion coefficient. 15