KNT/KW/16/6564

B.Pharm. Fifth Semester (C.B.S.) Examination

PHARMACEUTICS—V (Physical Pharmacy)

Paper—1 (5T1)

Time : Three Hours]   [Full Marks : 80

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

   (2) Attempt any **four** questions from the remaining questions.

   (3) All questions carry equal marks.

   (4) Draw neat labeled diagram wherever necessary.

   (5) Assume suitable data wherever necessary.

   (6) Discuss the reaction, mechanism wherever necessary.

   (7) Use of electronic calculator, excluding programmable calculator is permitted.

1. Solve any **five** :

   (a) Explain why mixed emulsifiers produce a more stable emulsion than single emulsifier.

   (b) How the surfactants are classified according to chemical structures ?

   (c) What is gold number ?

   (d) What are the properties of lyophilic and lyophobic colloids ?

   (e) Give the formula for spreading coefficient. What is its significance ?

   (f) Describe the mechanisms by which particle gets charged in the medium.

   (g) Define :

      (i) Electrophoresis

      (ii) Electroosmosis

      (iii) Streaming potential

      (iv) Sedimentation potential.   5×4=20

2. (a) Give the applications of surfactants.   8

   (b) Define CMC. Explain factors affecting CMC.   7

3. What is electrical double layer ? How does it control physical stability of dispersions ?   15

4. (a) Explain DLVO theory of suspensions.   8

   (b) Write a note on controlled flocculation.   7

5. Derive an equation for Langmuir's adsorption isotherm. Discuss the various adsorption isotherms.   15

6. Describe the methods to determine the surface area of particles.   15

7. Write notes on (any *two*) :

   (a) Angle of repose and its significance

   (b) Porosity, its types and significance

   (c) Davies theory of Emulsions

   (d) Ostwald's rule and instability of emulsions.   15