NKT/KS/17/6552

B.Pharm. Semester—III (C.B.S.) Examination

PHARMACEUTICS–III (Unit Operations)

Paper—1

Time : Three Hours] [Maximum Marks : 80

Note :— (1) Question No. **1** is compulsory.

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

(3) Draw neat labelled diagrams 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** of the following :- 4×5=20

(a) Define (i) Sieve number

(ii) Sieve size.

(b) Explain effect of speed of rotation on ball mill efficiency.

(c) What are filter aids ? Comment on their influence on rate of filtration.

(d) What is vortex formation ? Give the methods of prevention of vortex formation.

(e) Explain Centrifugal effect. Give significance of centrifugation process.

(f) What do you understand by Reynold's number ? What is its importance ?

(g) Compare surface filtration and depth filtration.

2. Explain :

(a) Principle of cyclone separator with well labelled diagram.

(b) Official grades of powder as per IP.

(c) Sieve analysis. 15

3. Discuss factors affecting size reduction. Give principle, construction, working and applications of fluid energy mill. 15

4. (a) Enlist flow meters. Compare Orifice meter and Venturimeter. 8

   (b) Write a note on energy losses. 7

5. (a) Write in detail about belt conveyors and pneumatic conveyor. 8

   (b) Discuss various theories of filtration. Write detailed account on Rotary Drum filter. 7

6. (a) Explain the mechanisms of solid mixing. Describe principle, construction, working and uses of planetary mixer. 8

   (b) Classify centrifugation equipments. Elaborate on supercentrifuge in detail. 7

7. Write short notes (any **three**) :

   (a) Molecular diffusion in liquids.

   (b) Silverson mixer homogenizer.

   (c) Bernoulli's theorem.

   (d) Ball mill. 5×3=15