

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