B. Pharm. Semester-IV (C.B.S.) Examination
PHARMACEUTICS–IV (Unit Operations)
Paper–I

Time—Three Hours]   [Maximum 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) Use of electronic calculator is permitted.

1. Solve any **FIVE** :

(a) Define distillation. Write its applications.

(b) Define crystallization. Give different crystal forms or systems.

(c) Explain principle and working of spray dryer with diagram.

(d) Explain the principle of freeze drying. What are its pharmaceutical applications.

(e) What do you mean by air conditioning ? Write its pharmaceutical applications.

(f) Explain radiation and rate of radiation. What do you mean by black body and grey body ?

(g) Discuss Raoult's law and Dalton's law along with deviations. 4×5=20

2. (a) Explain the factors affecting evaporation in detail. 8

(b) Discuss principle, construction and working of forced circulation evaporator. 7

3. (a) Discuss the Mier's supersaturation theory of crystallization. What are its limitations. 8

(b) Describe the principle, construction and working of crystal crystallizer. Write its advantages. 7

4. (a) What do you mean by equilibrium moisture content ? How it is measured ? Give its applications. 8

(b) Describe principle, construction and working of fluidised bed dryer. Give its advantages. 7

5. (a) Give the mechanisms of heat flow. Explain the Fourier's law along with its applications. 8

(b) What are heat exchangers and interchangers ? Explain tubular heater in detail. 7

6. What is fractional distillation ? Write about fractionating columns. Discuss azeotropic and fractional distillation with suitable diagrams. 15

7. (a) What is corrosion ? Explain factors influencing corrosion. State any four methods to prevent it. 8

(b) Explain refrigeration process. Give its applications. Write refrigeration cycle with diagram. 7