NKT/KS/17/6558

B.Pharm (Fourth Semester) (C.B.S.) Examination
PHARMACEUTICS—IV
(Unit Operations)
Paper—1

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 labeled diagram wherever necessary.

1. Solve any **five** of the following :

   (a) Mention various factors influencing corrosion.

   (b) Draw a well labelled diagram of a Spray Dryer. Mention advantages of it.

   (c) Enlist various refrigerants. Draw a refrigeration cycle.

   (d) Differentiate between Swenson Walker crystallizer and vacuum crystallizer.

   (e) Give classification of dryers.

   (f) Draw a well labelled diagram of multiple effect evaporator.

   (g) State and explain Raoult's law and Henry's law.   5×4=20

2. (a) Define :

   (i)   Humidity

   (ii) Dew point

   (iii) Wet bulb temp.

   Give principle, working and construction of a Humidifier.   8

   (b) Explain various stages of crystallization and Mier's super saturation theory.   7

3. (a) Define the terms :

   (i)   Equilibrium moisture content

   (ii) Critical Moisture content.

   Give construction, working and well labelled diagram of a Fluidized Bed Dryer.   8

   (b) Give various mechanisms of Heat transfer. Derive the equation for rate of Heat transfer.   7

NXO—20307   1   (Contd.)

4. (a) Explain the term Fractional Distillation, giving example. Give various types of fractionating columns.

7

(b) Discuss factors affecting evaporation. Draw a well labelled diagram of Forced circulation evaporator.

8

5. (a) What do you know about Heat exchangers and Heat interchangers ? Draw a well labelled diagram of Shell and Tube evaporator.   8

(b) Explain behaviour of solids on drying. Give principle of working and applications of Freeze Drying.   7

6. (a) Give mechanism of corrosion. Explain various ways to prevent corrosion.   8

(b) Explain psychrometric charts. Give various methods of determination of Humidity.   7

7. (a) Explain various methods of feeding of multiple effect evaporator. Give an account on economy and capacity of multiple effect evaporators.   7

(b) Define :

(i) Volatility

(ii) Relative volatility.

Give an account of Molecular Distillation.   8