

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.

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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.

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

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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