KNT/KW/16/6558

B.Pharm. Fourth Semester (C.B.S.) Examination

PHARMACEUTICS–IV (Unit Operations)

Paper–1 (4 T 1)

Time : Three Hours] [Full Marks : 80

N.B. :— (1) Questions No. **1**. is compulsory.

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

(3) Draw neat labelled diagram wherever necessary.

1. (a) Define evaporation and explain factors affecting it.
   (b) Describe the drying rate curve. Explain its applications.
   (c) What do you mean by primary and secondary drying in freeze drying process ?
   (d) Explain polymorphism, crystal hydrate and crystal solvate.
   (e) Define the term crystal habit. Give examples. Draw well labelled diagram of crystal crystallizer.
   (f) Discuss any four factors influencing corrosion.
   (g) Define the terms EML, loss on dying, moisture content and drying rate. 5×4=20
2. (a) What are heat interchangers ? Explain principle, construction and working of liquid to liquid interchanger. 8
   (b) What is corrosion. Discuss about prevention and control of corrosion. 7
3. (a) Explain principle, construction and working of fluidized bed dryer. 8
   (b) Discuss principle, construction and working of forced circulation evaporator. 7
4. (a) Explain simple and fractional distillation process. Add a note on fractionating column. 8
   (b) Explain Rauolts law and Dalton's law. Discuss preparation of water for injection by distillation method. 7
5. (a) What are various mechanisms of heat flow. Explain Fourier's law for conduction of heat through a metal wall. 8
   (b) Explain principle, construction and working of vacuum crystallizer. 7
6. (a) What is humidification and dehumidification ? Explain various approaches and applications for dehumidification. 8
   (b) Define refrigeration. Explain principle along with refrigeration cycle. 7
7. (a) What are various applications of distillation. Explain azeotropic and exractive distillation. 8
   (b) Explain principle, construction and working of shell and tube heater. 7

NVM—6936