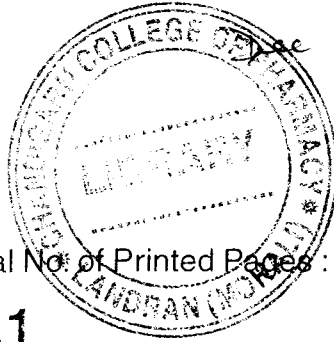


①



Roll No.....

Total No. of Questions : 10]

[Total No. of Printed Pages : 3

2.4.1

**PHARMACEUTICS-III
(UNIT OPERATIONS-II)**

(B.Pharmacy, 4th Semester, 2123)

Time : 3 Hours

Maximum Marks : 80

Note :- This paper consists of Three Sections. Section A is compulsory. Attempt any *Four* questions from Section B and any *Three* questions from Section C.

Section-A Marks : 2 Each

1. (a) Explain Fourier's law of conduction.
- (b) Write mathematical expression for OHTC.
- (c) What are multiple effect evaporators ?
- (d) What is enthalpy composition diagram ?
- (e) What is HETP ?
- (f) What is the difference between drying and evaporation ?

2.4.1

Turn Over

Z-52

(2)

- (g) What is flash drying ?
- (h) What is the difference between free moisture and bound moisture.
- (i) What is azeotropic distillations ?
- (j) What are trommels ?
- (k) What is the principle of fluidized bed dryer ?
- (l) What is the principle of fluid energy mill ?
- (m) What is uniformity index ?
- (n) Define black body.
- (o) What is the difference between wet steam and dry steam ?

Section-B Marks : 5 Each

- 2. Explain the construction and working of Planetary mixer.
- 3. Describe various laws governing energy and power requirements of size reduction mills.
- 4. Define steam economy and capacity of an evaporator.

2.4.1

Z-52

(3)

5. What factors need to be considered while selecting chemical reactors ?
6. Describe the construction and working of self-regulating flow meter.

Section-C Marks : 10 Each

7. Derive material and energy balance around rectifying column.
8. Explain the construction and working of ball mill with the help of a diagram.
9. Describe the principle, construction, working and use of agitated film evaporator.
10. The rate of heat loss from a pipe to air by convection and conduction is given by :

$$q/A = 0.5 (\Delta T)^{1.55}/(D_o)^{0.75}$$

where q = rate of heat loss, Btu/hr,

A = area of pipe surface, ft^2

ΔT = temperature difference, $^{\circ}\text{F}$

Express the relation in CGS units.

(1 Btu = 252 cal and 1 ft. = 30.54 cm).

2.4.1