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# B.Pharmacy (Semester - 4<sup>th</sup>) PHARMACEUTICS - III (PHM - 2.4.1) (UNIT OPERATIONS - II)

Time: 03 Hours

Maximum Marks: 80

#### **Instruction to Candidates:**

- 1) Section A is **compulsory.**
- 2) Attempt any Four questions from Section B.
- 3) Attempt any Three questions from Section C.

#### Section - A

Q1)

 $(15 \times 2 = 30)$ 

- a) Define primary and secondary quantities with suitable examples.
- b) Write various heat transfer mechanisms with suitable examples.
- c) Differentiate evaporation from Drying.
- d) Write the principle involved in Distillation?
- e) Define "Mixing" and "Demixing".
- f) Write the applications of freez drying on pharmacy.
- g) Write the equipment used in solid-solid mixing?
- h) Explain "azeotropic distillation".
- i) Define Automated Process Control? Write about its advantages.
- j) Classify evaporators?
- k) Explain the role of condensers in Evaporation?
- 1) Define Mixing Index?
- m) What are the various process variables to be monitored in Automatic process control system?
- n) Suggest suitable dryer to obtain milk powder from milk? Support your answer with reasons?
- o) Explain why steam is used frequently as source of heat in heaters?

P.T.O.

- Q2) Describe the following with neat sketch:
  - (a) Hammer Mill (2.5).
  - (b) Ball Mill (2.5).
- Q3) Explain the characteristics of impellers and turbines?
- Q4) Describe the Flash Distillation Process?
- Q5) Describe the factors affecting size reduction.
- **Q6**) Write the formulae and the importance of the Dimensionless Groups: Nusselt, Reynolds, Prandtl and Grashof.

### Section - C

(3 x 10:

- Q7) Describe the design and working of film evaporator.
- Q8) Describe the various factors to be taken into account in the design of Cher Reactors?
- Q9) Classify and describe the Screening equipment.
- Q10)Describe with a neat sketch the construction and working of Fluidised Dryer?

