

21<sup>st</sup> May, 13 Pharmaceutical Engineering - II

21/5/13

Sem - III (Rev.) A. T. K. T.

80 : 1st half. 13-shilpa(f)

Con. 2795-13.

Sem III (Rev.) ATKT - Ph. Engg - II

DC-2219

(2 Hours)

[Total Marks : 40

- N.B. :** (1) Attempt any **four** questions.  
(2) Draw **neat, well-labelled** diagrams wherever **necessary**.

1. (a) Enlist the various pharmaceutical applications of fluidization. 1  
Discuss in detail the construction and working of a fluidised bed dryer. 4
- (b) Classify various liquid-liquid extractors and write in detail on Non-agitated columns. 5
2. (a) Write in detail on principle and working of Swenson Walker crystallizer. 5  
(b) State the principle behind steam distillation and discuss the method of preparation of volatile oils. 5
3. (a) What is constant rate period ? 1  
Give the construction and working of vacuum tray dryer. 4
- (b) Enlist various stages of boiling inside a vertical tube. 1  
Give construction and working of Horizontal tube evaporator. 4
4. (a) Elaborate on the various waste treatment processes employed in pharmaceutical industry. 5  
(b) Discuss the various chemical hazards encountered in pharmaceutical industry. 5
5. (a) Classify various solid-liquid extraction equipments. 1  
Explain the design and working of a Robert diffusion battery. 4
- (b) Write the principle and features of molecular distillation. 3  
Give the applications of molecular distillation. 2
6. Write short notes on :- (any two) 10
  - (a) Azeotropic distillation
  - (b) Expansion and bucket traps
  - (c) Rotary drum dryer.

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