

Total No. of Questions : 6]

SEAT No. :

P1988

[5145]-406

[Total No. of Pages : 2

S.Y. B.Pharmacy
PHARMACEUTICAL ENGINEERING
(2013 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Answers to the two sections should be written in separate books.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *All questions are compulsory.*

SECTION - I

Q1) Explain theory & mechanism of drying. Give working of spray dryer in detail. **[10]**

OR

Write a note on different types of heat exchangers and explain process of heat transfer in boiling liquids.

Q2) Answer any five: **[15]**

- a) Explain factors affecting evaporation process.
- b) Give Stefan-Boltzmann law of heat transfer.
- c) Give working of Horizontal Effect Evaporator.
- d) Explain factors affecting drying.
- e) Explain construction & working of flash dryer.
- f) Classify heat exchangers & draw a labelled diagram of shell & tube heat exchangers.
- g) Give application of freeze dryer.

Q3) Write notes on any two: **[10]**

- a) Fourier's law & steady state heat transfer.
- b) Fluidized bed dryer.
- c) Falling film evaporator.
- d) Two film theory of mass transfer.

P.T.O.

SECTION - II

Q4) Explain Bernoulli's theorem, with its application and limitations. **[10]**

OR

Explain various types of corrosion. Explain any two methods to combat corrosion.

Q5) Answer any Five: **[15]**

- a) Explain Reynold's number.
- b) What is boiling point diagram?
- c) Explain plate efficiency.
- d) What is caking of crystals? How it is prevented?
- e) Explain working of Rotameter.
- f) Explain diffusion theory of crystal growth.
- g) Add a note on fractionating columns used in distillation process.

Q6) Write notes on any two: **[10]**

- a) Theory of supersaturation with its limitations.
- b) Molecular distillation.
- c) Types of packing in packed columns.
- d) Swenson-Walker crystallizer.

