[5049]-406

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 answer 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 different mechanisms of Heat Transfer in detail. Add a note on heat transfer to boiling liquids. **[10]**

OR

Give significance of drying in Pharmacy. Explain the mechanism of drying and give a detailed account of Fluidized Bed Dryer. **[10]**

Q2) Answer any five from the following: **[15]**
   a) Give working of tray dryer.
   b) Explain significance of vapour recompression in evaporation process.
   c) Differentiate between evaporation & drying.
   d) Explain various factors affecting drying process.
   e) Explain Kirchoff's law.
   f) Add a note on molecular diffusion in gases.
   g) Explain working of a drum dryer.

Q3) Write notes on any two: **[10]**
   a) Falling film evaporator.
   b) Theory of interphase mass transfer.
   c) Efficiency & capacity of multiple effect evaporator.
   d) Spray dryer.

P.T.O.

SECTION - II

Q4) What is rectification? Give an account of various fractionating columns used in distillation. **[10]**

OR

Explain in detail Mier's theory of supersaturation & give an account of nucleation & crystal growth. **[10]**

Q5) Answer any five from the following: **[15]**

    a)   Construction and working of Pitot tube.

    b)   Explain working of differential manometer.

    c)   Explain working of Rotameter.

    d)   Enlist different types of corrosion.

    e)   Explain ring packing in columns.

    f)   What is H.E.T.P.?

    g)   How is caking of crystals prevented?

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

    a)   Bernoullis theorem & its limitations.

    b)   Quantity flow meters.

    c)   Boiling point diagram.

    d)   Distillation of immiscible liquids.

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