

[Total No. of Questions - 4] [Total No. of Printed Pages - 2]  
(2064)

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**B. Pharmacy (Ayurveda) 4th Semester Examination**

**Principles of Pharmaceutical Operations (O.S.)**

**Paper-IV**

**Time : 3 Hours**

**Max. Marks : 90**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

1. Answer any ten:

- (a) Laws governing energy and power requirements of mill's.
- (b) Give any four varieties of stainless steel.
- (c) Suggest suitable mixers for mixing ointments.
- (d) Sublimation drying.
- (e) Henry's law.
- (f) Nano filtration.
- (g) Attrition.
- (h) Elutriation.
- (i) What is enthalpy composition diagram?
- (j) Dew Point.
- (k) Relative Volatility.
- (i) Applications of air conditioning in pharmaceuticals.

(2×10=20)

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2. Answer any two of the following:
- (a) What are the methods of heat transfer? Explain the law of heat transfer by conduction.
  - (b) Suggest the suitable equipment which is used in the drying of thermolabile, hygroscopic material with the help of neatly labelled diagram.
  - (c) Define and classify pumps? Explain with neat diagram, any two pumps. (2×12½=25)
3. Answer any two of the followings:
- (a) Describe with a neat sketch the construction and working of spray dryer?
  - (b) Describe briefly the devices employed for measurement of temperature and pressure.
  - (c) Describe the design and working of multiple - effect evaporator? (2×10=20)
4. Answer the following:
- (a) Comment: Freeze dried material have very good solubility.
  - (b) Describe the principle of refrigeration.
  - (c) Describe the preparation of purified water using simple distillation assembly.
  - (d) Write a note on centrifugal sedimentor.
  - (e) Write about the moisture content and LOD. (5×5=25)