

[Total No. of Questions - 7] [Total No. of Printed Pages - 2]  
(2064)

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

**Pharmaceutics-Principles of Pharmaceutical  
Operations (N.S.)**

**BPA-424**

**Time : 3 Hours**

**Max. Marks : 70**

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

**Note :** Question 1 is compulsory. Attempt any five questions from remaining six.

1. (i) Discuss concept of boundary layer.  
(ii) Enumerate fundamental laws of unit operations.  
(iii) Discuss various types of flow of fluids.  
(iv) Give significance of mixing in pharmacy.  
(v) Differentiate between filtration & clarification.  
(vi) Write a note on ultrafiltration.  
(vii) Give basis for selection of mills for comminution.  
(viii) Explain Henry's law.  
(ix) Give concept of moisture content.  
(x) Write application of refrigeration. (10×2=20)
2. Explain principle of centrifugation. Discuss construction & working of an industrial centrifuge. (10)

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3. Describe factors effecting filtration. Give construction & working of rotary drum filter. (10)
4. Give basic laws of heat transfer. Explain construction & working of double pipe heat exchanger. (10)
5. (a) Discuss basic principles of evaporation.  
(b) Write a note on humidity charts. (10)
6. (a) Describe principle of refrigeration & air conditioning.  
(b) Write a note on materials used for construction of a pharmaceutical plant. (10)
7. (a) Write a note on solid-solid extraction.  
(b) Give construction & working of spray dryer. (10)