

[Total No. of Questions - 18] [Total No. of Printed Pages - 2]  
(2124)

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**B. Pharmacy 3rd Semester Examination**

**Unit Operation-II (NS)**

**BP-232**

**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 :** Attempt any two question from Section A and eight questions from Section B. All questions in Section C are compulsory.

**SECTION - A**

1. Describe fundamentals of reactors design for chemical reactions.
2. What do you understand by stoichiometry? Discuss unit process material and energy balances.
3. Discuss in brief about mechanism of drying. Explain different dryers used in pharmaceutical industry. (2×10=20)

**SECTION - B**

4. Describe Raoult's law.
5. Discuss different methods for measurement of EMC.
6. Explain the modes of stress applied in size reduction.
7. Describe official standards for powders.
8. Write the elements of computer aided manufacturing.

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9. Discuss different applications of stoichiometric equation.
10. Classify different type of evaporators with example.
11. Describe Fourier's law for conduction of heat through a metal wall.
12. What do you understand by the term "energy balance"? Discuss different applications of energy balance with examples.
13. Write a note on mixing of solids. (8×5=40)

#### SECTION - C

14. Write a note on mechanisms of size reduction.
  15. Write principle of hummer mill.
  16. Draw a free moisture content curve [FMC].
  17. Define the terms 'distillation' and 'Evaporation'.
  18. What is the difference between evaporation and drying? (5×2=10)
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