**Subject Code: B132201/R13**

**II B.Pharmacy II Semester Supplementary Examinations Nov. - 2016**

# PHARMACEUTICAL UNIT OPERATIONS-II

**Time: 3 hours**                                     **Max. Marks: 70**

Question Paper Consists of **Part-A** and **Part-B**
Answering the question in **Part-A** is Compulsory,
Three Questions should be answered from **Part-B**
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## PART-A

1. (a) Define conduction and convection with equations.
   (b) Define the following with equations
      (i) Raoult's Law      (ii) Relative volatility
   (c) What are the factors influencing evaporation?
   (d) Write a short note on mechanism of drying.
   (e) Write a short note on modes of size reduction with examples.
   (f) What do you mean by vortex? How is it prevented?

                                                          [3+3+4+4+4+4]

## PART-B

2. (a) What is Conduction? Explain the Fourier's law of conduction for a cylindrical tube.
   (b) Write a note on Tubular Heater.

                                                          [10+6]

3. (a) Write the theory of evaporation.
   (b) Explain in detail about climbing film and falling film Evaporators.

                                                          [6+10]

4. (a) Write the working principles of large scale industrial simple distillation.
   (b) Write the principle, construction and working of Flash Distillation.

                                                          [8+8]

5. (a) Explain drying curves.
   (b) Write in detail about principle, construction and working of Spray Dryer and freeze dryer.

                                                          [4+12]

6. (a) What is Size reduction? Explain in detail about factors effecting size reduction.
   (b) Explain the principle, construction, working and applications of Ball mill.

                                                          [6+10]

7. (a) Write the principle, construction, working & uses of planetary mixer.
   (b) Write working principle of colloid mill with pharmaceutical applications.

                                                          [8+8]

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