

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.PHARMACY- SEMESTER-I • EXAMINATION – WINTER-2016**

**Subject Code:2210001****Date: 27/01/2017****Subject Name: UNIT OPERATION-I****Time: 10.30 AM – 01.30 PM****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Describe the mechanisms of size reduction with suitable examples of equipment. **06**  
(b) Explain Fluid Energy Mill. **05**  
(c) Explain Ball mill. **05**
- Q.2** (a) Explain elutriation. Describe elutriation methods. **06**  
(b) Describe pharmacopoeial standards for sieves. **05**  
(c) Discuss cyclone separator for size separation. **05**
- Q.3** (a) Classify equipments for solid mixing. Explain Planetary Motion Mixer. **06**  
(b) Give mechanisms of solid- solid and liquid – liquid mixing. **05**  
(c) Explain the terms with example: Positive Mixture, Negative Mixture and Neutral Mixture. **05**
- Q.4** (a) Discuss Mier's supersaturation theory with its limitations. **06**  
(b) Explain mechanism of crystallization using neat and labeled diagram. **05**  
(c) Describe Swenson-Walker crystallizer with diagram. **05**
- Q.5** (a) Enumerate types of Extraction processes. Explain Multiple Maceration. **06**  
(b) Write about various solvents used for Extraction. **05**  
(c) Describe Soxhlet apparatus for extraction. **05**
- Q. 6** (a) Enlist various hazards encountered in Industry. Explain Electrical Hazards. **06**  
(b) Describe briefly the different devices available for measurement of temperature. **05**  
(c) Write brief note on Fire Extinguishers. **05**
- Q.7** (a) Describe methods for Waste water treatment in Pharmaceutical Industry. **06**  
(b) Describe elements of automated process control system. **05**  
(c) Write a note on supercritical fluid extraction **05**

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