

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER- 1 EXAMINATION – SUMMER -2019**Subject Code: 2210001****Date: 28-05-2019****Subject Name: Unit Operation-I****Time: 10:30 AM TO 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) Explain principle, construction, working, advantages and disadvantages of Swenson Walker crystallizer with the help of a diagram. **06**
(b) Explain Mier's Super saturation theory. Discuss its limitations and applications **05**
(c) Write a note on spherical crystallization. **05**
- Q.2** (a) Write a note on construction, principle, working, advantages, disadvantages and Applications of fluid energy mill. **06**
(b) Explain factor affecting size reduction. **05**
(c) Explain in detail Kick's theory, Bond's theory and Rittinger's theory for energy requirements in size reduction. **05**
- Q.3** (a) Enumerate methods for determination of particle size. Write a note on Sieve Shaker. **06**
(b) Give the classification of powders based on size and list the specification and standard for sieves **05**
(c) Describe the construction, working, and uses of cyclone separator with the help of a diagram **05**
- Q.4** (a) Write a note on mechanism and theory of mixing **06**
(b) Give examples of high shear and low shear mixers. Explain degree of mixing. **05**
(c) Explain in detail the Planetary mixer. **05**
- Q.5** (a) With a neat diagram explain the advantages and disadvantages of double cone Mixer. **06**
(b) Write a note on solvents used for extraction. **05**
(c) Differentiate maceration and percolation along with examples **05**
- Q. 6** (a) Define extraction and explain theory of extraction **06**
(b) Explain in detail flow level measurement in automated process control system **05**
(c) What is caking of crystals? Explain methods for prevention of caking of crystals **05**
- Q.7** (a) What are possible industrial hazards? How can they be controlled? **06**
(b) Write a note on waste water treatment in pharmaceutical industry. **05**
(c) Write a note on temperature measurement in automated process control system **05**
