

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM – SEMESTER – 1- EXAMINATION –WINTER - 2018

Subject Code:2210001**Date: 01/01/2019****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 the mechanisms of size reduction. **06**
(b) Give principle and construction of hammer mill. **05**
(c) Discuss importance of correct speed in operation of ball mill and write disadvantages of ball mill. **05**
- Q.2** (a) What is screening of powders? Write grades of powder in brief according to IP. **06**
(b) Discuss principle, working, advantages and disadvantages of the sieve shaker machine. **05**
(c) Give major applications of size reduction of drug substances. **05**
- Q.3** (a) Write a short note on cyclone separator. **06**
(b) Explain term mixing and give mechanisms of mixing in solids. **05**
(c) Discuss the factors affecting mixing of solids. **05**
- Q.4** (a) Explain construction, advantages, disadvantages and applications of double cone blender. **06**
(b) Write a note on planetary mixer. **05**
(c) Explain the term crystallization and give its major applications. **05**
- Q.5** (a) Describe theory of crystallization in brief. **06**
(b) Draw Mier's Solubility Curve and explain it in brief. **05**
(c) Write a brief note on Krystal crystallizer. **05**
- Q. 6** (a) Give theory and types of extraction. **06**
(b) Write in brief on super critical fluid extraction. **05**
(c) Discuss elements of automatic process control systems in brief. **05**
- Q.7** (a) Enumerate various process variables and write measurement of any one of them in automated process. **06**
(b) Discuss the chemical hazards and its prevention in pharmaceutical industries. **05**
(c) Discuss waste water management system in industries. **05**
