

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.**

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|-------------|-----|---|-----------|
| 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 it's 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 |
