

GUJARAT TECHNOLOGICAL UNIVERSITY

B. PHARM – SEMESTER I • EXAMINATION – WINTER • 2015

Subject code: 2210001

Date: 29-12-2015

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.

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|-------------|---|-----------|
| Q.1 | (a) Describe the mechanisms of size reduction with suitable examples of equipment. | 06 |
| | (b) Advantages of size reduction process. | 05 |
| | (c) Discuss rotary cutter mill. | 05 |
| Q.2 | (a) Discuss sieve shaker machine. | 06 |
| | (b) Discuss cyclone separator for size separation. | 05 |
| | (c) Define (1) Size separation (2) Screening (3) Sieve number (4) Coarse powder (5) Oversize material. | 05 |
| Q.3 | (a) Classify mixing equipments based on scale of mixing. | 06 |
| | (b) Discuss mechanism of mixing in solids. | 05 |
| | (c) Discuss planetary motion mixer for mixing. | 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) Discuss the factors affecting caking of crystal. | 05 |
| Q.5 | (a) Discuss Soxhlet extractor for continuous hot extraction. | 06 |
| | (b) Discuss solvents used for extraction. | 05 |
| | (c) Applications of extraction and leaching in pharmacy. | 05 |
| Q. 6 | (a) Discuss the basic elements of automated process control systems. | 06 |
| | (b) Discuss the objectives of automated process control systems. | 05 |
| | (c) Define (1) Hazard (2) Accident (3) Process (4) Control (5) Instrumentation. | 05 |
| Q.7 | (a) Discuss prevention of fire hazards. | 06 |
| | (b) Enlist factors affecting the selection of a mill for size reduction. | 05 |
| | (c) Discuss agitated batch crystallizer. | 05 |
