

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – I • EXAMINATION – SUMMER • 2015

Subject Code: 2210001

Date: 25-05-2015

Subject Name: Unit Operation-I

Time: 02:30 pm - 05:30 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)	Discuss the objectives and importance of size reduction with examples.	06
	(b)	Explain particle size determination by sedimentation.	05
	(c)	Write a detailed note on solvents used for extraction.	05
Q.2	(a)	Discuss Swenson walker crystallizer with a labelled diagram.	06
	(b)	Discuss various mechanisms of size reduction with examples.	05
	(c)	Enlist various types of extraction processes and explain any one of them in detail.	05
Q.3	(a)	Explain in detail the mixer used for mixing semisolids.	06
	(b)	Explain in detail the working, advantages and disadvantages of cyclone separator.	05
	(c)	Discuss the theory of crystallization.	05
Q.4	(a)	Write a note on Mier's super saturation theory.	06
	(b)	Define 1. Mixing 2. Mixing index 3. Positive Mixing 4. Negative Mixing 5. Neutral mixing with examples.	05
	(c)	Explain construction, working, advantage and disadvantage of fluid energy mill.	05
Q.5	(a)	Describe various theories for energy requirement for size reduction.	06
	(b)	Discuss the pharmacopeial standards of sieves.	05
	(c)	Discuss the objective and principles of mixing with examples.	05
Q. 6	(a)	Write a note on supercritical fluid extraction.	06
	(b)	Discuss crystal habit and crystal shape.	05
	(c)	Write a note on automated process control system for temperature control.	05
Q.7	(a)	Discuss the objectives of crystallization and differentiate between crystallization and precipitation.	06
	(b)	Discuss the elements of automated process control systems.	05
	(c)	Discuss fire and safety hazards with respect to industrial hazard and safety precautions.	05
