

SARDAR PATEL UNIVERSITY
Programme & Subject: B.Sc (Industrial Chemistry)
Semester: VI
Syllabus with Effect from: November-2013

Paper Code: US06CICH06	Total Credit: 3
Title of Paper: Mass Transfer Operations	

Unit	Description in detail	Weightage (%)
I	Distillation - volatility and relative volatility, Boiling point diagram and equilibrium diagram, Types of distillation, Mass and enthalpy balance calculations, Calculation of number of theoretical plates, Mc-Cabe Thiel method, Importance of reflux ratio, Steam distillation, Equipments for Distillation .	25%
II	Drying, Classification of dryers, Compartment dryer, Tunnel dryer ,Rotary dryer, Drum dryer, Spray dryer etc., Types of moisture, Theory of drying.	25%
III	Crystallization - approaches for crystallization, Batch and continuous crystallization, Theory of crystallization. Gas absorption, Solvents for gas absorption, Batch and continuous type equipments for gas absorption.	25%
IV	Leaching and liquid liquid extraction, Factors affecting rate of leaching and extraction, Industrial extractors, Leaching of cellulose material and fine solids, mechanical agitators. Batch and continuous type equipments liquid extractor, Solvents for extraction.	25%

Basic Text & Reference Books:

- Unit Operations : Volume I & II, by K. A. Gavhane (Nirali Prakashan - Pune)
- Introduction to Chemical Engineering by Walter L Badger and Juline T Banchero (McGraw - Hill Book Co.)
- Unit Operation of Chemical Engineering by Warreh L Mc Cabe & Jullian C Smith (McGraw - Hill Book Co.)
- Chemical Engineering (volume I & II) by J. M. Coulson & K. F. Richardson (Asian Books Pvt. Ltd., New delhi)

