

20PEB229P					Heat and Mass Transfer Practical					
Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
0	0	2	1	2	-	-	-	50	50	100

COURSE OBJECTIVES

- To provide the concepts of experimental evaluation, applications and importance of heat and mass transfer
- To provide the significance and difference between various heat transfer methods
- To provide the concepts to conduct experiments for diffusion and mass transfer co-efficient

Heat Transfer Practical's

1. Determination of thermal conductivity of solids
2. Studies in heat transfer by natural convection
3. To compare overall heat transfer coefficients for parallel flow and counter flow in double pipe heat exchanger
4. To study the performance of 1-2 fixed tube sheet heat exchanger and calculate overall heat transfer coefficient
5. Determination of Heat transfer coefficient in laminar flow
6. Heat transfer in turbulent flow
7. Radiation heat transfer
8. Heat transfer studies in plate heat exchanger

Mass Transfer Practical's

1. To determine the % extraction of diluted aqueous organic solution using suitable solvent.
2. To determine the diffusion co-efficient of CCl₄ in air & its variation with temperature.
3. Determine mass transfer co-efficient of liquid (water) evaporation to atmospheric air at elevated temperature.
4. To determine the efficiency of single stage leaching operation.
5. To find out the liquid side mass transfer coefficient K_La in the packed column.
6. To determine the mass transfer co-efficient for dissolution of benzene acid with and without Chemical reaction.
7. To prepare the ternary diagram for a system of three liquid one pair partially soluble system.
8. To determine the mass transfer co-efficient of vaporization of solid into air.

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1- Understand the practical importance of thermal conductivity of solids
CO2- Understand the natural convention by heat transfer
CO3- Learn the radiation phenomena in heat transfer
CO4- Implement the concept of extraction method for organic solution
CO5- Understand the diffusion method in practically
CO6- Understand the mass transfer co-efficient in a chemical reaction

TEXT/REFERENCE BOOKS

< Cengel, Y. A. (2007) Heat & Mass Transfer: A Practical Approach, Tata McGraw-Hill Education

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks: 100

PART A: Evaluation Based on the class performance and Laboratory book

PART B: Viva Examination based conducted experiments

Exam Duration: 3 Hrs

50Marks

50 Marks