

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering - SEMESTER-IV • EXAMINATION – WINTER 2013

Subject Code: 340504

Date: 02-12-2013

Subject Name: Mass Transfer-I

Time: 10:30 am - 01:00 pm

Total Marks: 70

Instructions:

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Each question carry equal marks (14 marks).
5. Draw the figure wherever necessary.

- Q:1(a) Define extraction and write applications of it. 07
(b) Classify mass transfer operation with examples. 07
- Q:2(a) Explain choice of solvents for absorption. 07
(b) Define leaching and write applications of it. 07
OR
(b) How will you represent 25% A, 20% B and 55% C on Triangular co-ordinates. 07
- Q:3(a) Derive $D_{AB}=D_{BA}$. 07
(b) Differentiate molecular diffusion and eddy diffusion. 07
OR
- Q:3(a) Define stage efficiency, feed, extract, raffinate, solvent, HETP, absorption. 07
(b) Explain film theory and penetration theory. 07
- Q:4(a) Explain system of three liquid one pair partially soluble. 07
(b) Derive material balance equation of absorption for one component transferred Counter current flow. 07
OR
- Q:4(a) Explain flow mixer and settler of extraction. 07
(b) Discuss leaching by shanks system. 07
- Q:5(a) Derive single stage material balance equation and representation of it on Ternary diagram for extraction. 07
(b) Explain packed tower for absorption. 07
OR
- Q:5(a) Discuss about minimum liquid gas ratio for absorber. 07
(b) Explain Heap leaching. 07
