USN ☐☐☐☐☐☐☐☐☐☐   **18CH62**

Sixth Semester B.E. Degree Examination, July/August 2022
Mass Transfer Operations – II

Time: 3 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1   With a neat sketch, explain construction and working of a packed column.   **(20 Marks)**

OR

2 a. Explain different types of trays.   **(10 Marks)**
   b. Derive a material balance equation for multistage counter current absorption operation.
                                                                              (10 Marks)

Module-2

3 a. What are the points to be considered for selection of solvent for absorption operation?
                                                                              (10 Marks)
   b. Explain absorption with chemical reaction.   **(10 Marks)**

OR

4 a. With a neat sketch, explain simple distillation process.   **(08 Marks)**
   b. A liquid mixture containing 40 moles methanol and 60 mole % water is fed to a differential distillation at atmospheric pressure with 60 mole % of the liquid is distilled. Find the composition of the composited distillate and the residue. Take relative volatility, $\alpha = 2.16$.
                                                                              (12 Marks)

Module-3

5   Define q. Explain different feed conditions for distillation column.   **(20 Marks)**

OR

6   With a neat sketch, explain the following:
     (i)   Azeotropic distillation.   (ii)   Extractive distillation.   **(20 Marks)**

Module-4

7   With block diagram, derive the material balance equation for single stage and multi stage extraction operation.   **(20 Marks)**

OR

8   With a neat sketch, explain working of any two extraction equipments.   **(20 Marks)**

Module-5

9 a. Explain the factors to be considered for leaching operation.   **(10 Marks)**
   b. Write a note on single stage leaching operation.   **(10 Marks)**

OR

10   With a neat sketch, explain any two leaching equipment   **(20 Marks)**

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