Q.30 Describe the mixer-settler extraction system in brief.

Q.31 Prove that DAB = DBA for equimolar counter diffusion.

Q.32 Describe in brief the diffusion in solids.

SECTION-D

Note: Long answer type questions. Attempt any three questions out of four questions.   (3x10=30)

Q.33 Describe the construction & working of fractionating distillation.

Q.34 Describe the construction & working of Bollman extractor.

Q.35 Describe the construction & working of rotary dryer.

Q.36 Compare packed tower and plate tower.

4th Sem. / Chemical Engg.

Subject : Mass Transfer

Time : 3 Hrs.   M.M. : 100

SECTION-A

Note: Objective type questions. All questions are compulsory   (10x1=10)

Q.1 Write name of any one solid-gas mass transfer operation.

Q.2 Write name of any one gas-liquid mass transfer operations.

Q.3 Wet bulb temperature is _____ than the dry bulb temperature.

Q.4 Expand HETP.

Q.5 Driving force for diffusion is _____.

Q.6 Write the name of any one dryer used for continuous drying.

Q.7 Write the name of any type of regular packing.

Q.8   Write the name of any type of plate/tray used in column/tower.

Q.9   Write any one solvent used for gas absorption operation.

Q.10 In extraction mass transfer operation _____ phases are involved.

SECTION-B

Note: Very short answer type questions. Attempt any ten questions out of twelve questions. (10x2=20)

Q.11 Define diffusion.

Q.12 Define mass transfer coefficient.

Q.13 Define Humidity.

Q.14 Define unbound moisture content.

Q.15 Define reflux ratio.

Q.16 Define humid volume.

Q.17 Define equilibrium moisture content.

Q.18 Define de-humidification.

Q.19 Define Azeotrope.

Q.20 Define critical moisture content.

Q.21 Define dew point.

Q.22 State Rault's law.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions.   (8x5=40)

Q.23 Describe the effect of changing the reflux ratio on tower size.

Q.24 Describe the flash distillation.

Q.25 Describe eddy diffusion & how it affects the rate of diffusion.

Q.26 Describe the selection criteria for solvent for gas absorption.

Q.27 List and draw different types of arrangement in cooling towers.

Q.28 State the conditions in which weeping and entrainment occurred in a column & their remedies.

Q.29 Enlist the need of drying a material.