Q.21 Discuss equilibrium moisture content. (CO4)

Q.22 Derive the equation for steady state equimolar counter diffusion in gases. (CO1)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Discuss rate of drying curve under constant drying conditions. (CO4)

Q.24 Explain cooling tower and draw different cooling arrangement. (CO3)

Q.25 Write the construction and working of mechanically agitated vessel with a labelled diagram. (CO2)

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4th Sem / Chemical Engineering

Subject : Mass Transfer Operations-I

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 In drying operation mass in transfer from (CO4)

a) Solid to gas b) Gas to solid

c) Gas to liquid d) Liquid to gas

Q.2 In cooling tower the temp of water may be cooled up to (CO3)

a) Dew point

b) Dry bulb temperature

c) Wet bulb temperature

d) Room temperature

Q.3 In gas absorption gas mixture is contacted with a (CO2)

a) Solute b) Solvent

c) Gases d) Solid

Q.4 Eddy diffusion is due to (CO1)

a) Laminar flow b) Stagnant flow

c) Turbulent flow d) None of the above

Q.5 Henry's law state for solubility of _____ (CO2)

a) Gas in liquid b) Liquid in gas

c) Gas in gas d) Liquid in liquid

Q.6 Spray chamber utilized in which mass transfer operation. (CO3)

a) Drying b) Absorption

c) Extraction d) Humidification

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define bound moisture content. (CO4)

Q.8 Define molar flux (CO1)

Q.9 Name type of packing. (CO2)

Q.10 Name adiabatic equipment used for humidification. (CO3)

Q.11 Define moisture content on wet basis. (CO4)

Q.12 Define Raoult's law. (CO2)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Describe diffusion and its types. (CO1)

Q.14 Explain mechanism of drying operation. (CO4)

Q.15 Explain mechanism of mass transfer by Higbie's penetration theory. (CO1)

Q.16 Write properties of tower packings used for gas absorption. (CO2)

Q.17 Discuss mass transfer coefficient. (CO1)

Q.18 Describe spray chamber. (CO3)

Q.19 Explain wet bulb temperature with a diagram.(CO3)

Q.20 Discuss NTU & HTU for a packed column.(CO2)