

- Q.19 What do you mean by humidity ? Write in brief about relative and percentage humidity
- Q.20 Explain the terms channeling and loading in packed column
- Q.21 Discuss rate of drying curve
- Q.22 Write the role of diffusion in mass transfer

SECTION-D

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

- Q.23 What is tower packing ? Explain the working different types of tower packing and write about the properties of tower packing
- Q.24 Define the word drying. Explain the working of tray dryer with the help of neat diagram
- Q.25 Write short note on any two of the following:
- Dew point
 - Moisture content on wet basis
 - Wet bulb temperature
 - Humid Heat

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4th Sem / Chemical Engg. (Pulp & Paper)

Subject : Mass Transfer

Time : 3 Hrs.

M.M. : 60

SECTION-A

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

- Q.1 In Fick's first Law, what does the symbol D represent
- Diffusion coefficient
 - Density
 - Distance
 - Dynamic viscosity
- Q.2 What does film theory assume?
- A thick turbulent layer for mass transfer
 - A thin stagnant film through which diffusion occurs
 - Instantaneous mass transfer across the entire phase
 - No resistance to mass transfer

Q.3 What does HTU stand for in gas absorption ?

- a) Heat Transfer unit
- b) Height of Transfer unit
- c) Hydraulic Transfer Unit
- d) Humidity Transfer Unit

Q.4 What is the definition of humidity ?

- a) Amount of water vapor in the air
- b) Amount of dry air in the mixture
- c) Temperature of the air
- d) Pressure of the air

Q.5 What is equilibrium moisture content?

- a) Moisture level where material gains water
- b) Moisture Level where material neither gains nor loses water
- c) Maximum possible moisture content
- d) Minimum possible moisture content

Q.6 Which problem is associated with excessive liquid flow in a packed column?

- a) Flooding
- b) Channeling
- c) Weeping
- d) Loading

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SECTION-B

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

Q.7 Give names of any two mass transfer operations

Q.8 Expand NTU

Q.9 Discuss any one use of humidity chart

Q.10 What is the effect if temperature on adsorption

Q.11 Write any one application of drying operation

Q.12 Write the mathematical formula of fick,s law

SECTION-C

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

Q.13 What is the relation between film and overall mass transfer coefficient.

Q.14 Discuss penetration theory of mass transfer

Q.15 What points are to be considered while selecting a solvent in gas absorption ?

Q.16 Draw and explain different cooling tower arrangements

Q.17 Write any four industrial applications of adsorption

Q.18 Define adsorption and write in brief about its types

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