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4th Sem / Chemical

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 NTU stands for (CO2)

a) Number of transfer unit

b) Number of the reticle unit

c) Number of transmission unit

d) Both (a) & (b)

Q.2 Humidity refers to (CO3)

a) Temperature of air

b) Dryness of air

c) Moisture content in given air

d) Both (a) & (b)

Q.3 Diffusion is due to (CO1)

a) Turbulent b) Laminar flow

c) Both (a) & (b) d) None of the above

Q.24 Describe construction, working and application of packed bed absorption column with a neat diagram. (CO2)

Q.25 Drive the equation for steady state diffusion through stationary gas. (CO1)

Q.4 Cooling tower is used for (CO3)

a) To decrease the temperature of circulate air

b) To decrease the temperatureof circulate water

c) To reuse the circulate water

d) None of the above

Q.5 Drying operation involves (CO4)

a) Both heat and mass transfer

b) Only Heat

c) Only mass

d) None of the above

Q.6 In Humidification te mass transfer take place from _____ phase and _____ phase. (CO3)

a) Liquid and gas b) Gas and Liquid

c) Liquid and solid d) Solid and liquid

SECTION-B

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

Q.7 Define saturated gas (CO3)

Q.8 Define unbound moisture content (CO4)

Q.9 Define gas absorption (CO2)

Q.10 Define mass transfer operation (CO1)

Q.11 Define humid volume (CO3)

Q.12 Define Eddy diffusion. (CO1)

SECTION-C

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

Q.13 Describe the role of diffusion in mass transfer operation. (Co1)

Q.14 Write selection criteria for solvent in gas absorption. (CO2)

Q.15 Describe Whitman two film man transfer theory. (CO1)

Q.16 Write working of tray dryer. (CO4)

Q.17 State Fick's law of diffusion. (CO1)

Q.18 Describe type of power packings. (CO2)

Q.19 Write on types of cooling tower. (CO3)

Q.20 Differentiate between drying & evaporation operation. (CO4)

Q.21 Explain interphase mass transfer. (CO1)

Q.22 Explain psychrometric chart. (CO3)

SECTION-D

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

Q.23 Calculate the time of drying for constant and falling rate period. (CO4)