

- Q.25 Write the working of Rotary dryer ?
 - Q.26 Explain penetration theory of mass transfer ?
 - Q.27 Define leaching and channeling ?
 - Q.28 Draw two cooling tower arrangement ?
 - Q.29 Define rate of drying and draw its curve ?
 - Q.30 Write a short note on time on drying ?
 - Q.31 Write Reynolds number with its application ?
 - Q.32 Write on molecular and eddy diffusion ?
 - Q.33 Describe about humidity chart ?
 - Q.34 Draw the diagram of trade dryer and also write there uses ?
 - Q.35 Derive the relation for diffusion through stationary gas ?

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Differentiate humidification on Dehydification with example and also write about relative humidity humid heat and humid volume ?

Q.37 Define mass transfer classify mass transfer explain all with diagram ?

Q.38 What is drying explain construction and working of trade dryer with its application ?

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4th Sem / Chemical Engineering, P & P

Subject:- Mass Transfer I

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Dew point is measured in terms of _____

 - a) °CTd
 - b) °Fad
 - c) °KTd
 - d) °RTd

Q.2 Expand NTU

 - a) Network of transmission units
 - b) Number of transfer units
 - c) Number of temperature unit
 - d) Nephelometric turbidity units

Q.3 Mass transfer is due to

 - a) A species concentration gradient in a gas
 - b) A species concentration gradient in a solid
 - c) A species concentration gradient in the liquid
 - d) A species concentration gradient in a mixture

Q.4 Expand LMTD.

 - a) Log mean thermal difference
 - b) Log mean temperature difference
 - c) Log mean thermal disturbance
 - d) Log mean thermodynamics

Q.5 Define bubble point

- a) The temperataure where the first bubble of vapour is formed
- b) The temperature of the air needs to be cooled to the bubble
- c) The temperature at which first drop of water is formed
- d) The pressure at which the first drop of water is formed

Q.6 Name any one solvent

- a) Salt
- b) Bronze
- c) Methanol
- d) Sugar

Q.7 Which of the following is mass transfer operation ?

- a) Gas absorption
- b) Heat transfer operation
- c) Convection
- d) Radiation

Q.8 Which of the following flow is related of cooling tower?

- a) Parallel flow
- b) Counter flow
- c) Perpendicular flow
- d) Horizontal flow

Q.9 The sum of internal energy and the product of pressure and volume of thermodynamic system is ?

- a) Entropy
- b) Enthalpy
- c) Dew point
- d) Moisture content

Q.10 The process of movement of molecules under a concentration gradient ?

- a) Distillation
- b) Diffusion
- c) Extraction
- d) Moisture content

SECTION-B

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

Q.11 Name of the two mass transfer theories ?

Q.12 Write the unit of mass transfer and coefficient ?

Q.13 What is fluidised bed ?

Q.14 Define batch process ?

Q.15 Write a note on dew point ?

Q.16 Define drying ?

Q.17 Name any one column of random packing ?

Q.18 Define diffusion ?

Q.19 Define Raoult's law ?

Q.20 Define cooling tower ?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain web bulb temperature with neat diagram ?

Q.22 Write properties of tower packings ?

Q.23 Write a role of diffusion in mass transfer ?

Q.24 What is equilibrium right condition of equilibrium between gas and liquid ?