

- Q.26 Write a note on ultra filtration with its application.

Q.27 Draw a well labelled diagram of sieve tray distillation column.

Q.28 Describe the different types of nucleation.

Q.29 Explain dialysis process in brief.

Q.30 Define the term Adsorption and also explain its working.

Q.31 Describe the spray tower used in extraction process.

Q.32 Explain in brief on membrane separation process.

Q.33 Explain procedure of MC. Cabe Theile method.

Q.34 Explain optimum reflux ratio with a graph.

Q.35 Write a note on rectification and stripping section.

SECTION-D

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

- Q.36 Explain construction and working of Boll man's extractor with a neat diagram.

Q.37 Explain construction and working of draft tube baffle crystallizer with neat diagram.

Q.38 Write short note on any two.

 - Selection of solvent for extractor
 - Reverse Osmosis
 - Mier's saturation theory

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**5th Sem / Branch : Chemical Engg./ Paper & Pulp.
Sub. : Mass Transfer-II**

Time : 3Hrs. M.M. : 100

M.M. : 100

SECTION-A

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

- Q.1 The top product of distillation column is known as
a) Bottom product b) Distillate
c) Crystals d) Solvent

Q.2 The process of distillation is used for the liquids having _____.
a) Difference in their boiling point
b) Difference in their melting point
c) Difference in their solubility
d) None of the above

Q.3 Solvent extraction is _____ analytical technique.
a) Separating b) Qualitative
c) Quantitative d) Identification

Q.4 Solution which is obtained after filtration is _____.
a) Suspended solution b) Clear solution
c) Colloidal solution d) None of above

- Q.5 Crystal phases can be inter converted by varying _____.
a) Temperature b) Pressure
c) Size d) Viscosity
- Q.6 Which of the following is known as mother liquor _____.
a) Solvent b) Solute
c) Solution d) Filtrate
- Q.7 Adsorption of gas on solid surface depends upon
a) Nature of gas
b) Surface areas of adsorbent
c) Temperature and pressure
d) All above
- Q.8 What are the application of membrane
a) Nano filtration b) Micro filtration
c) Ultra Filtration d) All above
- Q.9 What are the driving forces in membrane separation
a) Osmotic pressure
b) Concentration difference
c) Partial pressure
d) All above
- Q.10 Extraction is a _____ operation.
a) Solid-Liquid b) Gas-Liquid
c) Liquid-Liquid d) Gas-Gas

SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Distillation process is used for the separation of _____.
Q.12 One example of crystallization process.
Q.13 Write an example of stage type extractor process.
Q.14 Nature of absorbent is _____.
Q.15 Physical adsorption is due to _____ force.
Q.16 Ultra filtration has pore size in _____ range.
Q.17 In osmosis direction of solvent is reversed by application of pressure greater than _____.
Q.18 Ion exchange is an application of _____.
Q.19 Crystallization is based on difference of _____.
Q.20 The partial pressure in solution is explained by _____ law.

SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Explain concept of Q-line.
Q.22 Discuss the extractive distillation with an example.
Q.23 Define the term Leaching and write its applications.
Q.24 Write industrial application of adsorption.
Q.25 Explain the mechanism of crystallization process.