SECTION-D

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

Q.23 With the help of neat diagram explain the construction and working of swenson Walker crystallizer.

Q.24 Explain McCabe Theule Method. Write the procedure for calculating the number of plates by MacCabe Theile Method.

Q.25 Write short note on any two of the following :

    a)   Meir's saturation theory

    b)   Dialysis

    c)   Enthalpy

    d)   Molecularity

5th Sem / Chemical (Pulp & Paper)

Subject : Chemical Engineering Operations

Time : 3 Hrs.   M.M. : 60

SECTION-A

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

Q.1 Distillation is based on the difference of

    a)   Melting point   b)   Boiling point

    c)   Pressure   d)   Solubility

Q.2 Solvent as third component is used in which distillation process

    a)   Extractive   b)   Flash

    c)   Steam   d)   Fractional

Q.3 Separation process based on the difference of solubility is called

    a)   Crystallization   b)   Drying

    c)   Distillation   d)   Adsorption

Q.4 Which of the following is an example of crystallization process

a) RO

b) Microfiltration

c) Dialysis

d) Sugar manufacturing

Q.5 The zeroth law of thermodynamics is the basis for the measurement of :

a) Temperature   b) Pressure

c) Volume   d) Energy

Q.6 What is the unit of entropy?

a) Joules   b) Kelvin

c) Joules per Kelvin   d) Joules per mole

SECTION-B

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

Q.7 What is equilibrium

Q.8 Explain Dalton's law

Q.9 Crystallization refers to as formation of_____

Q.10 Write any two applications of membrane separation

Q.11 Give one example of open system

Q.12 Write the full form of MFR

SECTION-C

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

Q.13 Define volatility. Express relative volatility in its mathematical expression.

Q.14 What do you mean by Distillation? Explain its types.

Q.15 Write a note on ultra-filtration and its application.

Q.16 Explain solubility curve with its graphical presentation

Q.17 Write about types of membranes

Q.18 Explain the mechanism of crystal formation

Q.19 Describe the working of plug flow reactor with the help of neat diagram.

Q.20 Explain single and multiple reactions.

Q.21 Differentiate between reversible and irreversible reactions.

Q.22 Explain first and second law of thermodynamics.