Q.18 State and explain Lami's theorem in brief.

Q.19 Explain the concept and important of half life period?

Q.20 Discuss the concept of continuous process in brief?

Q.21 Discuss need and importance of process flow sheet in brief?

Q.22 Define and discuss Stefan-Boltzman law in brief?

SECTION-D

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

Q.23 What is unit operation? Describe any four examples of unit operation in brief?

Q.24 Describe the classification of mass transfer operations, on the basis of direct contact of two immiscible phases, in detail with the help of one example for each type?

Q.25 Describe the manufacture of urea in detail with the help of process flow diagram depicting the various unit processes and unit operations involved?

No. of Printed Pages : 4 180517/030526
Roll No. .....

1st Year / Chemical Engg.

Subject : Introduction to Chemical Engineering

Time : 3 Hrs. M.M. : 60

SECTION-A

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

Q.1 Which of the following is a mean of transfer of energy between system and surrounding for a closed system?

a) Kinetic energy b) Potential energy

c) Entropy d) Heat

Q.2 The material balance is based upon which of the following laws?

a) Conservation of linear momentum

b) Conservation of angular momentrum

c) Conservation of mass

d) Conservation of charge

Q.3 What should be the value of Reynolds number for laminar flow in a circular pipe?

a) >2100 b) <2100

c) > 4000 d) <4000

Q.4 Which one of the following has a direct bearing on extent of mass transfer?

a) Concentration difference

b) Temperature difference

c) Pressure difference

d) Voltage difference

Q.5 Which of the following represent a unit operation?

a) Adsorption b) Halogenation

c) Combustion d) Polymerization

Q.6 Which of the following is a not a type of heat exchanger?

a) Double pipe b) Shell and tube

c) Blake jaw d) Plate and frame

SECTION-B

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

Q.7 What is S.I. unit of diffusivity?

Q.8 Define the batch reactor?

Q.9 Write the name of any two unit operations?

Q.10 What is ideal fluid?

Q.11 Which mode of heat transfer is independent of the circumstances of the flow of the fluid?

Q.12 Define the Boyle's law?

SECTION-C

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

Q.13 What is difference between fluid statics & fluid dynamics?

Q.14 What is role of a chemical engineer in the industry?

Q.15 Discuss Newtonian fluids in brief?

Q.16 Define and discuss Fourier's Law in brief?

Q.17 Discuss the alkylation in brief with the help of an example?