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Roll No.

180517/030526

1st Year / Branch : 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 The reaction which take place in single step in knows as
a) Homogenous b) Both A & B
c) Heterogenous d) None of these
- Q.2 A reacion in which conversion of reactant to product and product to reactant take place simultaneously is knows as
a) Reversible b) Both A & B
c) Irreversible d) None of these
- Q.3 The transfer of energy due to movement of particles of body is knows as
a) Conduction b) Radiation
c) Convection d) None of these
- Q.4 _____ is a measure of resistance to deformation at a given rate
a) Pressure b) Force
c) Viscosity d) None of these

- Q.5 Expand CSTR.
- Continuous stirred tank reaction
 - Combine stirred tank reaction
 - Continuous standards tank reaction
 - Composition standard tank reaction
- Q.6 The speed of conduction is high in
- Solid
 - Gas
 - Liquid
 - None of these

Section-B

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

- Q.7 Define forced convection and give an example.
- Q.8 What is thermal conductivity.
- Q.9 Name any one reactor used in chemical industries.
- Q.10 Define molecularity of reaction.
- Q.11 What is black body.
- Q.12 Give an example of convection.

Section-C

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

- Q.13 Explain fourier's law of heat conduction.
- Q.14 Classify different type of heat exchanger and evaporators.

- Q.15 What is diffusivity and give its unit.
- Q.16 Classify mass transfer operation.
- Q.17 Calculate the value of rate constant for first order reaction if value of half life period is 15 second.
- Q.18 Differentiate between elementary and non elementary reaction.
- Q.19 Write any four uses of urea.
- Q.20 Give statement of Stefan boltzmann law and specified is term involved.
- Q.21 Write a note on Newton's law of viscosity.
- Q.22 Write a note on Newtonian and Non Newtonian fluids.

Section-D

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

- Q.23 Write note on :
- Classification of equipments for distillation and drying
 - Homogeneous and heterogeneous reaction.
- Q.24 Explain various mode of heat transfer in detail?
- Q.25 Explain manufacturing process of urea with neat and clean flow sheet?