SECTION-D

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

Q.23 Explain in detail about various unit operations used in chemical industries by giving suitable example of each.

Q.24 Discuss various mass transfer operations with their examples in detail.

Q.25 Describe the manufacturing process of urea with various chemical reactions involved and flowsheet.

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1st Sem. / Chemical
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 unit process

a) Drying b) Oxidation
c) Distillation d) Leaching

Q.2 For turbulent flow, Reynolds number should be

a) Less than 2100 b) More than 2100
c) Less than 4000 d) More than 4000

Q.3 Which of the following is the fastest mode of heat transfer?

a) Conduction b) Free convection
c) Forced convection d) Radiation

Q.4 SI unit of diffusivity is

a) m^2/s b) m^3/s

c) s/m^2 d) s/m^3

Q.5 The reaction in which heat is released is called _____ reaction.

a) exothermic b) endothermic

c) homogeneous d) heterogeneous

Q.6 Molecular weight of Urea is_____ gram/mole

a) 50 b) 56

c) 60 d) 66

SECTION-B

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

Q.7 Material balance is based on law of conservation of _____ (Mass/Energy).

Q.8 A fluid offers resistance to the change of shape. (True/False)

Q.9 Give full form of PFR.

Q.10 Write one example of conduction.

Q.11 Define mass transfer.

Q.12 Which raw materials are required for the manufacturing of Urea.

SECTION-C

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

Q.13 Differentiate between Batch process and Continuos process. (any four)

Q.14 Write the statements of Dalton's Law and Henry's Law.

Q.15 Classify and define different types of flow.

Q.16 Classify different types of pumps used in chemical industries.

Q.17 State & explain Stefan Boltzmann's Law.

Q.18 Discuss about various modes of heat transfer.

Q.19 State and explain Fick's Law of diffusion.

Q.20 Classify different equipments used for distillation and drying.

Q.21 Differentiate between homogeneous and heterogeneous reaction.(any four)

Q.22 Discuss in detail about order and molecularity of a reaction.