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220515

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? (CO1)

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

Q.2 For Laminar flow, Reynolds number should be (CO2)

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

Q.3 Which of the following is a made of heat transfer (CO3)

a) Conduction b) Convection
c) Radiation d) All of these

Q.4 Which of the following is not a type of dryer?(CO4)

a) Tray dryer b) Rotary dryer
c) Buffle dryer d) Spray dryer

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 processes used in chemical industries by giving suitable example of each. (CO1)

Q.24 Discuss about various modes of heat transfer and their corresponding Laws in detail. (CO3)

Q.25 Describe the manufacturing process of urea with various chemical reactions involved and flowsheet. (CO5)

(**Note:** Course outcome/CO is for office use only)

Q.5 The reaction in which heat is absorbed is called _____ reaction. (CO5)

a) exothermic b) endothermic

c) homogeneous d) heterogeneous

Q.6 Molecular weight of Urea is ____ gram/mole.(CO5)

a) 50 b) 56

c) 60 d) 66

SECTION-B

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

Q.7 In unit _____ only chemical change occurs. (process/opertion). (CO1)

Q.8 A Fluid offers resistance to the change of shape. (True/False) (CO2)

Q.9 Give full form of CSTR. (CO5)

Q.10 Heat convection is governed by ____ law. (Fourier's/Newton's) (CO3)

Q.11 Define mass transfer. (CO4)

Q.12 Write chemical formula of Urea. (CO5)

SECTION-C

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

Q.13 Differentiate between Unit process and Unit operations. (any four) (CO1)

Q.14 Write the statements of Dalton's Law and Amagat's Law. (CO1)

Q.15 Discuss about any four properties of a fluid. (CO2)

Q.16 Classify different types of pumps used in chemical industries. (CO2)

Q.17 State & explain Stefan Boltzmann's Law. (CO3)

Q.18 Classify different types of heat exchangers and evaporators used in chemical industries. (CO3)

Q.19 State and explain Fick's Law of diffusion. (CO4)

Q.20 Discuss about any four mass transfer operations. (CO4)

Q.21 Describe exothermic and endothermic reactions. (CO5)

Q.22 Discuss in detail about order and molecularity of a reaction. (CO5)