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180517/30526

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 What is the name of the device used to generate a pressure greater than two atmosphere for gases?

a) Pump b) Fan

c) Blower d) Compressor

Q.2 Which of the following represent a unit process?

a) Distillation b) Leaching

c) Alkylation d) Crystallization

Q.3 The material balance is useful for?

a) Control of processing

b) Maximizing process yields

c) Minimizing product cost

d) All of the above

Q.4 Which of the following laws states that the total emissive power of a black body is proportional to the fourth power of the absolute temperature?

Q.24 What is diffusion? State and explain Fick's law of diffusion in detail?

Q.25 Describe the different modes of heat transfer in detail with the help of suitable example for each mode?

a) Stefan-Boltzmann law

b) Kirchhoff's law

c) Beer's law

d) Snell's law

Q.5 Which of the following is gas solid mass transfer operation?

a) Distillation b) Drying

c) Absorption d) Humidification

Q.6 The flow of ideal fluid is called?

a) Steady flow b) Laminar flow

c) Uniform flow d) Potential flow

SECTION-B

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

Q.7 Define the Charle's law?

Q.8 What is unique characteristic of a unit process?

Q.9 What is full form in CSTR in unit process terminology?

Q.10 What is S.I. Unit of density?

Q.11 Name the phase contact category of humidification mass transfer operation?

Q.12 What is the driving force for heat transfer?

SECTION-C

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

Q.13 Describe the concept of viscosity in brief?

Q.14 State and explain parallelogram law of forces?

Q.15 Explain any four application of chemical engineering in brief.

Q.16 What is difference between unit operation and Unit process?

Q.17 What is energy balance? Discuss its significance?

Q.18 Discuss the importance of mass transfer operations?

Q.19 What is difference between laminar and turbulent flow?

Q.20 Describe black body and gray body in brief?

Q.21 Define and discuss rate constant in brief?

Q.22 Explain the process for manufacture of urea in brief?

SECTION-D

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

Q.23 Explain the concept of order of reaction and molecularity of reaction? Discuss how these are different from each other?