No. of Printed Pages : 4
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220531

3rd Sem / Branch : Chemical
Sub.: Chemical Thermodynamics &
Reaction Engineering

Time : 3Hrs. M.M. : 60

SECTION-A

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

Q.1 Thermodynamic property of a system is ?

a) Concentration b) Density
c) Entropy d) Viscosity

Q.2 Which of one the following is not an intensive property?

a) Heat capacity b) Density
c) Pressure d) Viscosity

Q.3 The conversion process which shows decrease in entropy is?

a) Water into ice b) Ice into water
c) Water into steam d) None of these

Q.4 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.5 The standard Gibbs free energy change of a reaction is a function of the equilibrium?

a) Temperature only b) Pressure only

c) Composition only d) All of these

Q.6 A characteristic of an ideal plug flow reactor is ?

a) Axial dispersion b) Flat velocity profile

c) Uniform mixing d) All of these

SECTION-B

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

Q.7 Define the activation energy?

Q.8 What is non elementary reaction?

Q.9 What is full form the term CSTR used in chemical reaction engineering?

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

Q.11 Write the name of any one state function property?

Q.12 What is isothermal process?

SECTION-C

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

Q.13 Describe the concept of internal energy in brief?

Q.14 State and explain third law of thermodynamics?

Q.15 Explain the different types of systems in brief?

Q.16 What is the difference between exothermic reaction and endothermic reaction?

Q.17 What is Le-Chatelier's principle? Discuss its significance?

Q.18 Discuss the initial rate method used for determination of order of reaction?

Q.19 What are the characteristics of a good refrigerant?

Q.20 Discuss the carnot's cycle and its PV diagram in brief?

Q.21 Define and discuss molecularity of reaction in brief?

Q.22 Explain the vapour absorption refrigeration cycle in brief?

SECTION-D

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

Q.23 What is rate of reaction? Explain the different factors affecting the rate of reaction in detail?

Q.24 Describe the working of a plug flow reactor in detail with the help of a neat diagram? Discuss its advantages and disadvantages?

Q.25 Discuss the principle and working of heat pump? Explain its coefficient of performance of heat pump?