Q.27 Distinguish between catalytic and noncatalytic reaction.

Q.28 Discuss the effects of temperature on reaction rate.

Q.29 Classify reactors on the base of mode of operation.

Q.30 Write the concept of variable volume batch reactor.

Q.31 Give the constructional detail of steady state mixed flow reactor.

Q.32 Explain the significance of activation energy in reaction rate.

Q.33 Differentiate between endothermic and exothermic reaction with examples.

Q.34 Discuss the half-life period of overall order of irreversible reaction.

Q.35 Discuss any two of the following

i) Arrhenius Law ii) Space Time

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 What do you mean by homogeneous and heterogeneous reactions? Distinguish between both with suitable example

Q.37 Explain general graphical comparison of batch, mixed and plug flow reactor

Q.38 Explain the construction and working of CSTR with the help of neat diagram.

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Roll No. .....

5th Sem / Chem, Chem Engg. (Spl. Paint Tech.)
Chem Engg. (spl. Polymer. Engg.)
Sub.: Chemical Reaction Engineering

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 MFR stands for

a) Main free reactor b) Mixed free reactor
c) Mixed flow reactor d) None of these

Q.2 The batch reactor is not preferred because of

a) High Labour b) High Handling cost
c) Extra time to clean d) All of these

Q.3 The excess energy of the reactant required to dissociates into product is known as

a) Binding energy b) Activation Energy
c) Thermal Energy d) None of these

Q.4 The rate at which chemical substance reacts is proportional to its

a) Equivalent weight b) Atomic weight
c) Molecular weight d) Atomic Mass

Q.5 At equilibrium

a) The rate of forward reaction is equal to rate of backward reaction

b) The rate of forward reaction is more than rate of backward reaction

c) Reaction stops

d) None of these

Q.6 The reaction which proceed with absorption of heat is called

a) Endothermic reaction

b) Photochemical reaction

c) Exothermic reaction

d) None of these

Q.7 The rate constant of a reaction depends on

a) Temperature

b) Pressure

c) Composition

d) All of these

Q.8 Full form of is PFR

a) Plain free reactor b) Plug free reactor

c) Plug flow reactor d) None of these

Q.9 As the chemical reaction proceed the rate of reaction

a) Increases b) Decreases

c) Remains same d) None of these

Q.10 Equilibrium is

a) Dynamic state b) Static State

c) Both d) None of these

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Define Molecularity.

Q.12 Write SI unit of pressure.

Q.13 Expand CSTR.

Q.14 Write any one homogeneous reaction.

Q.15 Define rate of reaction.

Q.16 Discuss about limiting reactant.

Q.17 Write any one use of catalyst.

Q.18 Write an expression for zero order reaction.

Q.19 Give one example of reversible reaction.

Q.20 Define space velocity.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Differentiate between simple and multiple reaction with example.

Q.22 Explain the working of PFR.

Q.23 Write a note on order of reaction.

Q.24 Define homogeneous reaction with example.

Q.25 Write the various factor effecting chemical equilibria. Explain any one.

Q.26 State le chatlier principle and discuss it with suitable example.