SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.3 How will you explain the Rate of chemical Reaction? Explain how rate dependent on Conⁿ of Reactant.

Q.4 Write any two:-

i) Plug flow Reactor ii) Half Life

iii) Multiple Reaction iv) Batch Reactor

Q.5 The activation energy of a Bimolecular reaction is about 10150 Cal/mol. How much faster is this Reaction takes place at 650k then at 400k.

Q.6 What is Batch Reactor. Derive Relation of conⁿ & conversion for Constt volume Batch Reactor.

Q.7 Write short Note on:-

i) Zero order Reaction

ii) Order of Reaction

iii) Moleculacity.

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5th Sem. / Chem. Engg.

Subject : Chemical Reaction Engineering

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

Q.1 a) Define Heterogenous Reaction.

b) Write any two Catalyst name.

c) Write Collision Theory.

d) Explain Multiple Reaction.

e) What is Non Catalytic Reaction.

f) Define Rate of Reaction.

g) Write Zero order Reaction.

h) Draw Batch Reactor Diagram.

i) Define Reversible Reaction.

j) Write factors affecting chemical equilibria.

k) What is activation Energy.

l) Write about CSTR.

m) Define order of Reaction.

n) Write Arrhenius Law.

o) Define Thermodynamics.

p) What is Endothermic Reaction.

q) Write units for pressure.

r) Define Promotees.

SECTION-B

Note: Short answer type questions. Attempt any ten parts 10x4=40

Q.2 i) Write Transition state Theory.

ii) Differentiate Homogeneous & Heterogeneous Reaction.

iii) Write factor affecting chemical equilibria.

iv) Write activation energy concept.

v) Write method used to analyse the Kinetic of Reaction.

vi) Classify Catalyst.

vii) How will you distinct holding time from space time for flow.

viii) Draw & explain plug flow Reactor.

ix) What is difference b/w elementary & non elementary reaction.

x) Write four advantages of CSTR.

xi) Write short note on Conversion.

xii) Define catalyst. Give two examples of Catalysts.

xiii) Differentiate between endothermic & exothermic reactions giving one example of each.

xiv) Explain the process of regeneration of catalyst.

xv) What are 1^{st} order reactions? Give one example.