Q.26 Define single and multiple reaction with examples.

Q.27 Difference between Homogeneous and Heterogeneous reactions.

Q.28 Explain all the steps involved in Carnot cycle with Diagram.

Q.29 Define isobaric and polytropic process.

Q.30 Write second law of thermodynamics.

Q.31 Explain in brief open, closed and siolated system with examples.

Q.32 Explain activation energy.

Q.33 Discuss Zeroth Law of Thermodynamic.

Q.34 Discuss the effect of catalyst on the state of equilibrium.

Q.35 Explain the concept of adiabetic and isobaric.

SECTION-D

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

Q.36 Derive an expression of rate constant for second order reaction.

Q.37 Define reactors and Explain in detail the construction & working of any one reactor with diagram.

Q.38 Explain the construction and working detail of steady state mixed flow reactor.

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Roll No. ....

4th Sem / Branch : P & P

Sub.: Chemical Engineering Thermodynamics and reaction Engineering

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 S.I. Unit of heat is

a) Kelvin b) Pascal

c) Joule d) Second

Q.2 The entropy of an isolated system can never ____.

a) Decrease b) Be Zero

c) Increase d) None

Q.3 Enthalpy is an intensive property of a system

a) True b) False

Q.4 Pascal is a unit of

a) Work b) Pressure

c) Energy d) Entropy

Q.5 Carnot cycle is a reversible cycle

a) True b) False

Q.6 Which of th following is intensive property

a) Temperature b) Pressure

c) Density d) All

Q.7 Molecularity of reaction cannot be _______.

a) Zero b) Fraction

c) Negative d) All of above

Q.8 System can neither exchange matter nor energy with the surrounding is called_______

a) Open b) Closed

c) Isolated d) None

Q.9 Second law of thermodynamics introduce the concept of

a) Entropy b) Enthalpy

c) Free Energy d) Internal Energy

Q.10 Convert 10 Celsius into Kelvin

a) 273 b) 283

c) 263 d) None

SECTION-B

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

Q.11 Define System.

Q.12 Give any two variable affecting the rate of reaction.

Q.13 Define enthalpy.

Q.14 Write SI unit of Heat.

Q.15 Write the one example of extensive property.

Q.16 Write a disadvantages of batch reactor.

Q.17 State Dalton's law.

Q.18 Define Process.

Q.19 Describe half-life period of reaction.

Q.20 Name a Mixed and plus flow reactor.

SECTION-C

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

Q.21 Write the difference between reversible and irreversible.

Q.22 State the explain Amagat's law and Henery's law.

Q.23 Differentiate between elementary and elementary reaction.

Q.24 Write second law of thermodynamics.

Q.25 Explain Reversible and irreversible reaction with examples.