Q.34 Write example of adiabatic, isobaric and isothermal process.

Q.35 Write zeroth law of thermodynamics with help of examples.

SECTION-D

Note : Long Answer type question. Attempt any two questions. (2x10=20)

Q.36 Write working principle of heat pump with help of neat diagram.

Q.37 Explain the working principle, and efficiency of heat engine with help of neat diagram.

Q.38 Explain the isothermal, isobaric process and adiabatic process with suitable example.

Chemical Engineering

Subject : Chemical Engineering Thermodynamics/ Engg. Thermodynamics

Time : 3 Hrs. **M.M. : 100**

SECTION-A

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

Q.1 The Unit of length of SI unit is
a) Meter b) Centimeter
c) Kilometer d) None

Q.2 Total heat of a substance is also known as
a) Internal Energy b) Enthalpy
c) Thermal Capacity d) None

Q.3 In an isothermal process, the internal energy of gas molecules
a) Increase b) Decrease
c) Remains constant d) None

Q.4 Temperature of a gas is produced due to
a) Its heating value
b) Kinetic energy of molecules
c) Repulsion of molecules
d) Attraction of molecule

Q.5 One Watt is equal to
a) 1 Nm/s b) 1 N/m
c) 1 Nm/hr d) None

Q.6 Intensive property of a system is one whose value
a) Depends on the mass of the system

b) Does not depend on the mass of the system
c) Is not dependent on the path followed but on the state
d) Is dependent on the path followed and not on the state.

Q.7 The sum of internal energy (U) and the product of pressure and volume (p.v.) Is known as
a) Work Done b) Entropy
c) Enthalpy d) None

Q.8 The unit of power in S.I. Units is
a) Watt b) pascal
c) Erg d) Newton

Q.9 A tri-atomic molecule consists of ____ atoms.
a) 3 b) 1
c) 4 d) None

Q.10 The unit of pressure in S.I. Units is
a) Pascal b) mm of water column
c) kg/cm2 d) Dynes per square cm

SECTION-B

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

Q.11 What are surroundings?

Q.12 What is heterogenous function?

Q.13 Write ideal gas equation?

Q.14 Write one example of close system?

Q.15 Write one example of reversible reaction?

Q.16 What is dimensional formula of work?

Q.17 What is thermodynamic scale?

Q.18 Write Dimensional formula for heat?

Q.19 What is Hanry law equation?

Q.20 Write Dimensional formula for enthalpy.

SECTION-C

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

Q.21 What are extensive properties with help of example?

Q.22 Describe homogenous systems.

Q.23 What is state function?

Q.24 Describe concept of enthalpy.

Q.25 What is first law of thermodynamics for open systems?

Q.26 What is statement of the second law of thermodynamics.

Q.27 Describe Carnot cycle with help of diagram.

Q.28 What is efficiency for heat engine?

Q.29 Write reversible and irreversible reaction with help of example.

Q.30 What is equation for work done for adiabatic process.

Q.31 What is vapor compression refrigeration cycles?

Q.32 What is different temperature scale?

Q.33 Write difference between close system and open system.