Q.33 Write a note on Heat Engine.

Q.34 Difference between intensive and extensive properties with example.

Q.35 Write a note on Thermodynamics temperature scale.

SECTION-D

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

Q.36 Explain all operation of Carnot cycle with diagram.

Q.37 Write short note on any two of the followings.

1. Open & Isolated system
2. Elementary & Non-Elementary reaction
3. Adiabatic process
4. State and Path Function

Q.38 Describe absorption refrigeration cycle.

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4th Sem. / Chem. Chem Engg. (Spl. Paint Tech.) Chem Engg. (Spl. Polymer Engg.)

Subject : Chemical Engineering Thermodynamics/Engg. Thermody.

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

Q.1 The study of thermodynamics is Based upon:

a) First law of thermodynamics
b) Second law of thermodynamics
c) Third law of thermodynamics
d) All of these

Q.2 An example of extensive properties is

a) Surface tension b) Refractive index
c) Internal energy d) Viscosity

Q.3 The unit of Power

a) kW b) H.P.
c) kJ/s d) All

Q.4 Which of the following is a thermodynamics law?

a) Zeroth law of thermodynamics
b) Faraday's Law
c) Boyle's Law
d) None

Q.5 Which of the following follows the Carnot theorem.

a) Heat engines b) Gas turbine engines

c) Both A & B d) None

Q.6 System can be exchanged both matter and energy with the surroundings is called_____.

a) Open b) Closed

c) Isolated d) None

Q.7 The _____ law of thermodynamics deals with thermal equilibrium.

a) Third b) Second

c) Zeroth d) First

Q.8 Energy has different forms which include

a) Heat b) Work

c) All of the mentioned d) None

Q.9 Carnot cycle is a reversible cycle.

a) True b) False

Q.10 Boiler, turbine, condenser and pump together constitute a heat engine

a) True b) False

SECTION-B

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

Q.11 Define closed system.

Q.12 Define enthalpy.

Q.13 Define Heat engine.

Q.14 Name two refrigerants.

Q.15 Define isolated system.

Q.16 Write an example of second order reaction.

Q.17 Write Henry's law.

Q.18 Define Heat pump.

Q.19 Define First law of Thermodynamics.

Q.20 Define Adiabatic process.

SECTION-C

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

Q.21 Discuss Zeroth Law of Thermodynamic.

Q.22 Write the difference between reversible and irreversible.

Q.23 Explain the vapour compression refrigeration cycle.

Q.24 Write down the application of third law of thermodynamics.

Q25 State Amagat's law and Raoult's law.

Q.26 List five main properties of refrigerants.

Q.27 Difference between Homogeneous and Heterogeneous reactions.

Q.28 State and explain Zero order reaction.

Q.29 Explain the significance of Vander walls equation.

Q.30 Explain open, close and isolated system with example

Q.31 Sate dalton's law and Henry's law.

Q.32 Difference between Isothermal and isobaric process.