

Atma Ram Sanatan Dharma College

University of Delhi, South Campus

New Delhi-110021

Physical Chemistry Assignment

B.Sc. (H) Chemistry, Section – B

1. Derive a thermodynamic relationship between Gibbs free energy of reaction and reaction quotient (Q_c).
2. Write a short note on the following:
 - a) Temperature dependence of Equilibrium Constant.
 - b) Le Chatelier Principle
 - c) Colligative Property
 - d) Carnot Cycle
 - e) Joule-Thomson Effect
 - f) Chemical potential
3. Derive the Gibbs-Helmholtz equation in terms of :
 - (a) G & H
 - (b) A & E or U
4. State the laws of thermochemistry and standard heat of formation with example.
5. Derive the relation between C_p and C_v .
6. Show that the work done by the system in adiabatic reversible expansion is lesser than isothermal reversible expansion.
7. Discuss the effect of temperature on enthalpy of reaction (Kirchoff's Equation).
8. Discuss the criteria of spontaneity in terms of different thermodynamic variables.
9. State 3rd law of Thermodynamics & discuss the concept of residual entropy.

-----Do all the questions-----