Lesson Plan

Name of College- **KVA DAV College for Women, Karnal**
Name of Associate Professor: **Dr. Manju Singh**
Class and Section: **B.Sc I (3-4) Days (Section-A) and B.Sc. II 1, 2-5, 6 (Section- B)**
Subject: **CHEMISTRY**
Prescribed Textbook : **Pradeep's Physical Chemistry**
From July-November 2018

Week 1	
Week 1, Day 1 16/07/2018	Definition of Thermodynamic terms: System, Surrounding etc. Types of systems, intensive and extensive properties.
Week 1, Day 2 17/07/2018	State and Path Functions and their differentials. Thermodynamic process.
Week 1, Day 3 18/07/2018	Kinetic Molecular Theory of Gases , Maxwell's distribution of Velocities and energies.
Week 1, Day 4 19/07/2018	Inaugural Hawan
Week 1, Day 5 20/07/2018	Orientation Prog.
Week 1, Day 6 21/07/2018	Definition of Thermodynamic terms: System, Surrounding etc. Types of systems, intensive and extensive properties.
Week 2	
Week 2, Day 1 23/07/2018	Thermodynamic Equilibrium, Concept of heat and work. First law of thermodynamics: Definitions & Statements.
Week 2, Day 2 24/07/2018	Concepts of internal energy and enthalpy. Heat capacity, heat capacities at constant Volume and pressure and their relationship.
Week 2, Day 3 25/07/2018	Calculation of root mean square velocity, average velocity and most Probable velocity.
Week 2, Day 4 26/07/2018	Collision diameter, collision number, collision frequency and mean free path (Derivations excluded),
Week 2, Day 5 27/07/2018	State and path functions and their differentials. Thermodynamic process.
Week 2, Day 6 28/07/2018	Thermodynamic equilibrium, Concept of heat and work. First law of thermodynamics: statements & Definitions.
Week 3	
Week 3, Day 1 30/07/2018	Numerical Problems.
Week 3, Day 2 31/07/2018	***Shaheed Udham Singh Martyrs' day***
Week 3, Day 3	Deviation of Real gases from

01/08/2018	Ideal behavior and Numerical problems.
Week 3, Day 4 02/08/2018	Derivation of Van der Waal's Equation of State, its application in the calculation of Boyle's temperature (compression factor)
Week 3, Day 5 03/08/2018	Concepts of internal energy and enthalpy. Heat capacity, heat capacities at constant volume and pressure and their relationship.
Week 3, Day 6 04/08/2018	Numerical Problems.
Week 4	
Week 4, Day 1 06/08/2018	Class Test
Week 4, Day 2 07/08/2018	Joule–Thomson Coefficient for ideal gas and real gas and inversion temperature.
Week 4, Day 3 08/08/2018	Class Test
Week 4, Day 4 09/08/2018	**Critical Phenomenon** Critical temperature, critical pressure, critical volume and their Determination.
Week 4, Day 5 10/08/2018	Class Test
Week 4, Day 6 11/08/2018	Joule–Thomson Coefficient for ideal gas and real gas and inversion temperature.
Week 5	
Week 5, Day 1 13/08/2018	***Teej***
Week 5, Day 2 14/08/2018	Calculation of w,q, dU & dH for the expansion of ideal gases under isothermal condition for reversible process
Week 5, Day 3 15/08/2018	***Independence Day***
Week 5, Day 4 16/08/2018	PV isotherms of real gases, continuity of states, the isotherms of Van der Waal's equation,
Week 5, Day 5 17/08/2018	Calculation of w,q, dU & dH for the expansion of ideal gases under isothermal condition for reversible process
Week 5, Day 6 18/08/2018	Calculation of w,q, dU & dH for the expansion of ideal gases under Adiabatic conditions for reversible process.
Week 6	
Week 6, Day 1 20/08/2018	Calculation of w,q, dU & dH for the expansion of ideal gases under Adiabatic conditions for reversible process.
Week 6, Day 2 21/08/2018	Numerical Problems.
Week 6, Day 3 22/08/2018	***Id***
Week 6, Day 4 23/08/2018	Relationship between critical constants and Van der Waal's constants.

Week 6, Day 5 24/08/2018	Numerical
Week 6, Day 6 25/08/2018	Chemical Equilibrium Equilibrium constant and free energy,
Week 7	
Week 7, Day 1 27/08/2018	Chemical Equilibrium Equilibrium constant and free energy,
Week 7, Day 2 28/08/2018	Concept of chemical potential.
Week 7, Day 3 29/08/2018	Numerical problems & Critical compressibility factor. The Law of corresponding states.
Week 7, Day 4 30/08/2018	Assignment I
Week 7, Day 5 31/08/2018	Concept of Chemical potential.
Week 7, Day 6 01/09/2018	Assignment I
Week 8	
Week 8, Day 1 03/09/2018	***Janamashtmi***
Week 8, Day 2 04/09/2018	Assignment I
Week 8, Day 3 05/09/2018	***Talent Show (Tentative)***
Week 8, Day 4 06/09/2018	**Liquid States** Structure of liquids, Properties of liquids – surface tension,
Week 8, Day 5 07/09/2018	Thermodynamic derivation of law of chemical Equilibrium & Numerical.
Week 8, Day 6 08/09/2018	Class Test
Week 9	
Week 9, Day 1 10/09/2018	Thermodynamic derivation of law of chemical Equilibrium + Numerical.
Week 9, Day 2 11/09/2018	Class Test
Week 9, Day 3 12/09/2018	Refractive index, viscosity, vapor pressure and optical rotation.
Week 9, Day 4 13/09/2018	Queries
Week 9, Day 5 14/09/2018	Temperature dependence of equilibrium constant
Week 9, Day 6 15/09/2018	Clausius–Clapeyron equation and its applications.
Week 10	

Week 10, Day 1 17/09/2018	Temperature dependence of equilibrium constant
Week 10, Day 2 18/09/2018	Clausius–Clapeyron equation and its applications.
Week 10, Day 3 19/09/2018	**Solid State** Classification of solids, Law of constancy of interfacial angles,
Week 10, Day 4 20/09/2018	Law of rational indices, Miller indices, elementary ideas of symmetry
Week 10, Day 5 21/09/2018	Contd.
Week 10, Day 6 22/09/2018	Queries
Week 11	
Week 11, Day 1 24/09/2018	Contd.
Week 11, Day 2 25/09/2018	Queries
Week 11, Day 3 26/09/2018	Class Test
Week 11, Day 4 27/09/2018	Queries
Week 11, Day 5 28/09/2018	**Sessionals (Tentative)**
Week 11, Day 6 29/09/2018	**Sessionals (Tentative)**
Week 12	**Sessionals (Tentative)**
Week 12, Day 1 01/10/2018	**Sessionals (Tentative)**
Week 12, Day 2 02/10/2018	***Gandhi Jayanti***
Week 12, Day 3 03/10/2018	**Sessionals (Tentative)**
Week 12, Day 4 04/10/2018	**Sessionals (Tentative)**
Week 12, Day 5 05/10/2018	**Distributioln Law** Nernst distribution law – its thermodynamic derivation,
Week 12, Day 6 06/10/2018	Numerical
Week 13	
Week 13, Day 1 08/10/2018	**Distributioln Law** Nernst distribution law – its thermodynamic derivation,
Week 13, Day 2 09/10/2018	Numerical
Week 13, Day 3 10/10/2018	***AggarsenJayanti***

Week 13, Day 4 11/10/2018	Symmetry-elements, seven crystal systems and Fourteen Bravais lattices
Week 13, Day 5 12/10/2018	Applications of distribution law: (i) Determination of degree of hydrolysis and hydrolysis constant of aniline hydrochloride
Week 13, Day 6 13/10/2018	Numerical Problems
Week 14	
Week 14, Day 1 15/10/2018	Applications of distribution law: (i) Determination of degree of hydrolysis and hydrolysis constant of aniline hydrochloride
Week 14, Day 2 16/10/2018	Numerical Problems.
Week 14, Day 3 17/10/2018	X-ray diffraction, Bragg's law, a simple account of Laue method
Week 4, Day 4 18/10/2018	***Dussehra***
Week 14, Day 5 19/10/2018	Determination of equilibrium constant of potassium tri -iodide complex and
Week 14, Day 6 20/10/2018	Numerical Problems.
Week 15	
Week 15, Day 1 22/10/2018	Determination of equilibrium constant of potassium tri -iodide complex and
Week 15, Day 2 23/10/2018	Numerical Problems.
Week 15, Day 3 24/10/2018	***ValmikiJayanti***
Week 15, Day 4 25/10/2018	Rotating crystal method and Powder pattern method.
Week 15, Day 5 26/10/2018	Class Test
Week 15, Day 6 27/10/2018	***KarvaChauth***
Week 16	
Week 16, Day 1 29/10/2018	Class Test
Week 16, Day 2 30/10/2018	(iii) Process of Extraction + Numerical.
Week 16, Day 3 31/10/2018	Contd.
Week 16, Day 4 01/11/2018	***Haryana Day***
Week 16, Day 5 02/11/2018	(iii) Process of Extraction

Week 16, Day 6 03/11/2018	Numericals
Week 17 04-11/11/2018	**Diwali Break**
Week 18 12-15/11/2018	Revision