

**Name of the Assistant Professor: Dr. Amit Kumar**  
**Class and Section: B.Sc. (Non-Medical) Sem-I**  
**Period: July 2019 to November 2019**

<b>1st Week</b>	Day 1	16-Jul-19	Practicals
	Day 2	17-Jul-19	Maxwell's distribution of velocities and energies
	Day 3	18-Jul-19	Calculation of root mean square velocity, average velocity and most probable velocity
	Day 4	19-Jul-19	Collision diameter, collision number, collision frequency and mean free path
	Day 5	20-Jul-19	Deviation of Real gases from ideal behaviour
<b>2nd Week</b>	Sunday	21-Jul-19	
	Day 1	22-Jul-19	Practicals
	Day 2	23-Jul-19	Derivation of Vander Waal's Equation of State
	Day 3	24-Jul-19	Calculation of Boyle's temperature (compression factor)
	Day 4	25-Jul-19	Explanation of behaviour of real gases using Vander Waal's equation.
	Day 5	26-Jul-19	Critical temperature, Critical pressure, critical volume and their determination
<b>3rd Week</b>	Day 6	27-Jul-19	Critical temperature, Critical pressure, critical volume and their determination
	Sunday	28-Jul-19	
	Day 1	29-Jul-19	Practicals
	Day 2	30-Jul-19	Critical temperature, Critical pressure, critical volume and their determination
	Day 3	31-Jul-19	Holiday
	Day 4	01-Aug-19	Critical temperature, Critical pressure, critical volume and their determination
<b>4th Week</b>	Day 5	02-Aug-19	PV isotherms of real gases
	Day 6	03-Aug-19	continuity of states
	Sunday	04-Aug-19	
	Day 1	05-Aug-19	Practicals
	Day 2	06-Aug-19	the isotherms of Vander Waal's equation
	Day 3	07-Aug-19	relationship between critical constants and Vander Waal's constants.
<b>5th Week</b>	Day 4	08-Aug-19	Critical compressibility factor
	Day 5	09-Aug-19	The Law of corresponding states
	Day 6	10-Aug-19	Lequifaction of gases.
	Sunday	11-Aug-19	
	Day 1	12-Aug-19	Holiday
	Day 2	13-Aug-19	Structure of liquids.
<b>6th Week</b>	Day 3	14-Aug-19	Properties of liquids – surface tension
	Day 4	15-Aug-19	Holiday
	Day 5	16-Aug-19	viscosity vapour pressure
	Day 6	17-Aug-19	optical rotations and their determination
	Sunday	18-Aug-19	
	Day 1	19-Aug-19	Practicals
<b>7th Week</b>	Day 2	20-Aug-19	Classification of solids
	Day 3	21-Aug-19	Laws of crystallography
	Day 4	22-Aug-19	(i) Law of constancy of interfacial angles
	Day 5	23-Aug-19	(ii) Law of rationality of indices
	Day 6	24-Aug-19	(iii) Law of symmetry
	Sunday	25-Aug-19	
<b>8th Week</b>	Day 1	26-Aug-19	Practicals
	Day 2	27-Aug-19	Symmetry elements of crystals.
	Day 3	28-Aug-19	Definition of unit cell & space lattice.
	Day 4	29-Aug-19	Bravais lattices, crystal system.
	Day 5	30-Aug-19	Xray diffraction by crystals
	Day 6	31-Aug-19	Derivation of Bragg equation
<b>9th Week</b>	Sunday	01-Sep-19	
	Day 1	02-Sep-19	Practicals
	Day 2	03-Sep-19	Determination of crystal structure of NaCl, KCl.
	Day 3	04-Sep-19	Liquid crystals
	Day 4	05-Sep-19	Difference between solids, liquids and liquid crystals
	Day 5	06-Sep-19	Difference between solids, liquids and liquid crystals
<b>10th Week</b>	Day 6	07-Sep-19	types of liquid crystals
	Sunday	08-Sep-19	
	Day 1	09-Sep-19	Practicals
	Day 2	10-Sep-19	types of liquid crystals
	Day 3	11-Sep-19	Applications of liquid crystals.
	Day 4	12-Sep-19	Applications of liquid crystals.
<b>10th Week</b>	Day 5	13-Sep-19	Hydrogen Bonding – Definition, Types,
	Day 6	14-Sep-19	Hydrogen Bonding – Definition, Types,
	Sunday	15-Sep-19	
	Day 1	16-Sep-19	Practicals
Day 2	17-Sep-19	effects of hydrogen bonding on properties of substances	

	Day 3	18-Sep-19	effects of hydrogen bonding on properties of substances
	Day 4	19-Sep-19	application Brief discussion of various types of Vander Waals Forces
	Day 5	20-Sep-19	Metallic Bond- Brief introduction to meta llic bond
	Day 6	21-Sep-19	Inter-class competition
<b>11th Week</b>	Sunday	22-Sep-19	
	Day 1	23-Sep-19	Holiday
	Day 2	24-Sep-19	band theory of metallic bond
	Day 3	25-Sep-19	band theory of metallic bond
	Day 4	26-Sep-19	Semiconductors- Introduction, types and applications.
	Day 5	27-Sep-19	Semiconductors- Introduction, types and applications.
	Day 6	28-Sep-19	Comparative study of the elements including , diagonal relationships
<b>12th Week</b>	Sunday	29-Sep-19	
	Day 1	30-Sep-19	Practicals
	Day 2	01-Oct-19	Comparative study of the elements including , diagonal relationships
	Day 3	02-Oct-19	Holiday
	Day 4	03-Oct-19	Comparative study of the elements including , diagonal relationships
	Day 5	04-Oct-19	salient features of hydrides
	Day 6	05-Oct-19	salient features of hydrides
<b>13th Week</b>	Sunday	06-Oct-19	
	Day 1	07-Oct-19	solvation and complexation tendencies including their function in biosystems
	Day 2	08-Oct-19	Holiday
	Day 3	09-Oct-19	Chemical properties of the noble gases with emphasis on their low chemical reactivity
	Day 4	10-Oct-19	Chemical properties of the noble gases with emphasis on their low chemical reactivity
	Day 5	11-Oct-19	Chemical properties of the noble gases with emphasis on their low chemical reactivity
	Day 6	12-Oct-19	chemistry of xenon
<b>14th Week</b>	Sunday	13-Oct-19	
	Day 1	14-Oct-19	Practicals
	Day 2	15-Oct-19	chemistry of xenon
	Day 3	16-Oct-19	structure and bonding of fluorides
	Day 4	17-Oct-19	structure and bonding of fluorides
	Day 5	18-Oct-19	structure and bonding of fluorides
	Day 6	19-Oct-19	oxides & oxyfluorides of xenon
<b>15th Week</b>	Sunday	20-Oct-19	
	Day 1	21-Oct-19	Practicals
	Day 2	22-Oct-19	oxides & oxyfluorides of xenon
	Day 3	23-Oct-19	oxides & oxyfluorides of xenon
	Day 4	24-Oct-19	Vacations
	Day 5	25-Oct-19	Vacations
	Day 6	26-Oct-19	Vacations
<b>16th Week</b>	Sunday	27-Oct-19	Vacations
	Day 1	28-Oct-19	Vacations
	Day 2	29-Oct-19	Vacations
	Day 3	30-Oct-19	Vacations
	Day 4	31-Oct-19	Review of Inorganic Chemistry
	Day 5	01-Nov-19	Holiday
	Day 6	02-Nov-19	Review of Inorganic Chemistry
<b>17th Week</b>	Sunday	03-Nov-19	
	Day 1	04-Nov-19	Practicals
	Day 2	05-Nov-19	Exam Question Series
	Day 3	06-Nov-19	Exam Question Series
	Day 4	07-Nov-19	Exam Question Series
	Day 5	08-Nov-19	Exam Question Series

	Day 6	09-Nov-19	Exam Question Series
<b>18th Week</b>	Sunday	10-Nov-19	
	Day 1	11-Nov-19	Practicals
	Day 2	12-Nov-19	Holiday
	Day 3	13-Nov-19	Group Discussions
	Day 4	14-Nov-19	Class Test Series
	Day 5	15-Nov-19	Group Discussions
<b>19th Week</b>	Day 6	16-Nov-19	Class Test Series
	Sunday	17-Nov-19	
	Day 1	18-Nov-19	Class Test Series

**Name of the Assistant Professor: Dr. Amit Kumar**  
**Class and Section: B.Sc. (Non-Medical) Sem-III**  
**Period: July 2019 to November 2019**

<b>1st Week</b>	Day 1	16-Jul-19	
	Day 2	17-Jul-19	Definition of thermodynamic terms: system, surrounding etc.
	Day 3	18-Jul-19	Types of systems intensive and extensive properties
	Day 4	19-Jul-19	State and path functions and their differentials.
	Day 5	20-Jul-19	Thermodynamic process.
<b>2nd Week</b>	Sunday	21-Jul-19	
	Day 1	22-Jul-19	Concept of heat and work.
	Day 2	23-Jul-19	Zeroth Law of thermodynamics
	Day 3	24-Jul-19	First law of thermodynamics: statement, definition of internal energy and enthalpy.
	Day 4	25-Jul-19	
	Day 5	26-Jul-19	Heat capacity, heat capacities at constant volume and pressure and their relationship.
<b>3rd Week</b>	Day 6	27-Jul-19	Joule's law – Joule – Thomson coefficient for ideal gas and real gas
	Sunday	28-Jul-19	
	Day 1	29-Jul-19	
	Day 2	30-Jul-19	Inversion temperature.
	Day 3	31-Jul-19	Holiday
	Day 4	01-Aug-19	Calculation of w.q. dU & dH for the expansion of ideal gases under isothermal and adiabatic conditions for reversible process
<b>4th Week</b>	Day 5	02-Aug-19	Temperature dependence of enthalpy
	Day 6	03-Aug-19	
	Sunday	04-Aug-19	
	Day 1	05-Aug-19	
	Day 2	06-Aug-19	Kirchoffs equation.
	Day 3	07-Aug-19	Bond energies and applications of bond energies
<b>5th Week</b>	Day 4	08-Aug-19	Equilibrium constant and free energy
	Day 5	09-Aug-19	concept of chemical potential
	Day 6	10-Aug-19	Thermodynamic derivation of law of chemical equilibrium
	Sunday	11-Aug-19	
	Day 1	12-Aug-19	Holiday
	Day 2	13-Aug-19	Thermodynamic derivation of law of chemical equilibrium
<b>6th Week</b>	Day 3	14-Aug-19	Temperature dependence of equilibrium constant
	Day 4	15-Aug-19	Holiday
	Day 5	16-Aug-19	Temperature dependence of equilibrium constant
	Day 6	17-Aug-19	Van't Hoff reaction isochore
	Sunday	18-Aug-19	
	Day 1	19-Aug-19	
<b>7th Week</b>	Day 2	20-Aug-19	Van't Hoff reaction isotherm
	Day 3	21-Aug-19	Le-Chatelier's Principle and its applications
	Day 4	22-Aug-19	Clapeyron equation and Clausius – Clapeyron equation and its applications
	Day 5	23-Aug-19	Clapeyron equation and Clausius – Clapeyron equation and its applications
	Day 6	24-Aug-19	Nernst distribution law – its thermodynamic derivation
	Sunday	25-Aug-19	
<b>8th Week</b>	Day 1	26-Aug-19	
	Day 2	27-Aug-19	Modification of distribution law when solute undergoes dissociation,
	Day 3	28-Aug-19	Modification of distribution law when solute undergoes dissociation,
	Day 4	29-Aug-19	association and chemical combination
	Day 5	30-Aug-19	Determination of degree of hydrolysis
	Day 6	31-Aug-19	
<b>8th Week</b>	Sunday	01-Sep-19	Determination of hydrolysis constant of aniline hydrochloride
	Day 1	02-Sep-19	Determination of hydrolysis constant of aniline hydrochloride
	Day 2	03-Sep-19	Determination of hydrolysis constant of aniline hydrochloride
	Day 3	04-Sep-19	Determination of equilibrium constant of potassium tri-iodide complex
	Day 4	05-Sep-19	Determination of equilibrium constant of potassium tri-iodide complex

	Day 5	06-Sep-19	Determination of equilibrium constant of potassium tri-iodide complex
	Day 6	07-Sep-19	Determination of equilibrium constant of potassium tri-iodide complex
<b>9th Week</b>	Sunday	08-Sep-19	
	Day 1	09-Sep-19	
	Day 2	10-Sep-19	process of extraction
	Day 3	11-Sep-19	process of extraction
	Day 4	12-Sep-19	Definition of transition elements
	Day 5	13-Sep-19	Definition of transition elements
	Day 6	14-Sep-19	Definition of transition elements
<b>10th Week</b>	Sunday	15-Sep-19	
	Day 1	16-Sep-19	
	Day 2	17-Sep-19	position in the periodic table,
	Day 3	18-Sep-19	General characteristics & properties of 1st transition elements
	Day 4	19-Sep-19	General characteristics & properties of 1st transition elements
	Day 5	20-Sep-19	Structures & properties of TiO <sub>2</sub>
	Day 6	21-Sep-19	Inter-class competition
<b>11th Week</b>	Sunday	22-Sep-19	
	Day 1	23-Sep-19	Holiday
	Day 2	24-Sep-19	Structures & properties of VOCl <sub>2</sub>
	Day 3	25-Sep-19	Structures & properties of VOCl <sub>3</sub>
	Day 4	26-Sep-19	Structures & properties of FeCl <sub>2</sub>
	Day 5	27-Sep-19	Structures & properties of FeCl <sub>3</sub>
	Day 6	28-Sep-19	Structures & properties of CuCl <sub>2</sub>
<b>12th Week</b>	Sunday	29-Sep-19	
	Day 1	30-Sep-19	
	Day 2	01-Oct-19	Structures & properties of CuCl <sub>2</sub>
	Day 3	02-Oct-19	Holiday
	Day 4	03-Oct-19	Structures & properties of Ni(CO) <sub>3</sub>
	Day 5	04-Oct-19	Structures & properties of Ni(CO) <sub>4</sub>
	Day 6	05-Oct-19	General characteristics and properties of the 1st and 3rd transition elements
<b>13th Week</b>	Sunday	06-Oct-19	
	Day 1	07-Oct-19	
	Day 2	08-Oct-19	Holiday
	Day 3	09-Oct-19	General characteristics and properties of the 1st and 3rd transition elements
	Day 4	10-Oct-19	Comparison of properties of 3d elements with 4d & 5d elements
	Day 5	11-Oct-19	Comparison of properties of 3d elements with 4d & 5d elements
	Day 6	12-Oct-19	with reference only to ionic radii
<b>14th Week</b>	Sunday	13-Oct-19	
	Day 1	14-Oct-19	
	Day 2	15-Oct-19	with reference only to ionic radii
	Day 3	16-Oct-19	with reference only to oxidation state
	Day 4	17-Oct-19	with reference only to oxidation state
	Day 5	18-Oct-19	with reference only to magnetic and Spectral properties
	Day 6	19-Oct-19	with reference only to magnetic and Spectral properties
<b>15th Week</b>	Sunday	20-Oct-19	
	Day 1	21-Oct-19	
	Day 2	22-Oct-19	with reference only to stereochemistry
	Day 3	23-Oct-19	with reference only to stereochemistry
	Day 4	24-Oct-19	Vacations
	Day 5	25-Oct-19	Vacations
	Day 6	26-Oct-19	Vacations
<b>16th Week</b>	Sunday	27-Oct-19	Vacations

	Day 1	28-Oct-19	Vacations
	Day 2	29-Oct-19	Vacations
	Day 3	30-Oct-19	Vacations
	Day 4	31-Oct-19	Group Discussion
	Day 5	01-Nov-19	Holiday
<b>17th Week</b>	Day 6	02-Nov-19	Exam Question Series
	Sunday	03-Nov-19	
	Day 1	04-Nov-19	Group Discussion
	Day 2	05-Nov-19	Exam Question Series
	Day 3	06-Nov-19	Group Discussion
	Day 4	07-Nov-19	Exam Question Series
	Day 5	08-Nov-19	Exam Question Series
<b>18th Week</b>	Day 6	09-Nov-19	Exam Question Series
	Sunday	10-Nov-19	
	Day 1	11-Nov-19	Exam Question Series
	Day 2	12-Nov-19	Holiday
	Day 3	13-Nov-19	Exam Question Series
	Day 4	14-Nov-19	Class Test
	Day 5	15-Nov-19	Class Test
	Day 6	16-Nov-19	Class Test
<b>19th Week</b>	Sunday	17-Nov-19	
	Day 1	18-Nov-19	Class Test

**Name of the Assistant Professor: Dr. Amit Kumar**  
**Class and Section: B.Sc. (Non-Medical) Sem-V**  
**Period: July 2019 to November 2019**

<b>1st Week</b>	Day 1	16-Jul-19	Introduction to Quantum Mechanics
	Day 2	17-Jul-19	Black-body radiation, Planck's radiation law
	Day 3	18-Jul-19	photoelectric effect, heat capacity of solids
	Day 4	19-Jul-19	Practicals
	Day 5	20-Jul-19	Compton effect
<b>2nd Week</b>	Sunday	21-Jul-19	
	Day 1	22-Jul-19	wave function and its significance of Postulates of quantum mechanics
	Day 2	23-Jul-19	quantum mechanical operator
	Day 3	24-Jul-19	commutation relations, Hamiltonian operator, Hermitian operator
	Day 4	25-Jul-19	average value of square of Hermitian as a positive quantity
	Day 5	26-Jul-19	Practicals
	Day 6	27-Jul-19	Role of operators in quantum mechanics
<b>3rd Week</b>	Sunday	28-Jul-19	
	Day 1	29-Jul-19	Quantum mechanics on simultaneous prediction of position and momentum
	Day 2	30-Jul-19	wave function & energy of a particle in one dimensional box
	Day 3	31-Jul-19	Holiday
	Day 4	01-Aug-19	Pictorial representation and its significance
	Day 5	02-Aug-19	Practicals
	Day 6	03-Aug-19	Optical activity, polarization – (Clausius – Mossotti equation).
<b>4th Week</b>	Sunday	04-Aug-19	
	Day 1	05-Aug-19	Orientation of dipoles in an electric field
	Day 2	06-Aug-19	dipole moment, induced dipole moment
	Day 3	07-Aug-19	measurement of dipole moment-temperature method and refractivity method
	Day 4	08-Aug-19	measurement of dipole moment-temperature method and refractivity method
	Day 5	09-Aug-19	Practicals
	Day 6	10-Aug-19	dipole moment and structure of molecules
<b>5th Week</b>	Sunday	11-Aug-19	
	Day 1	12-Aug-19	Holiday
	Day 2	13-Aug-19	Magnetic permeability, magnetic susceptibility and its determination
	Day 3	14-Aug-19	Magnetic permeability, magnetic susceptibility and its determination
	Day 4	15-Aug-19	Holiday
	Day 5	16-Aug-19	Practicals
	Day 6	17-Aug-19	Application of magnetic susceptibility
<b>6th Week</b>	Sunday	18-Aug-19	
	Day 1	19-Aug-19	paramagnetism, diamagnetism and ferromagnetics
	Day 2	20-Aug-19	Electromagnetic radiation, regions of spectrum
	Day 3	21-Aug-19	basic features of spectroscopy
	Day 4	22-Aug-19	basic features of spectroscopy
	Day 5	23-Aug-19	Practicals

<b>7th Week</b>	Day 6	24-Aug-19	statement of Bornoppenheimer approximation, Degrees of freedom.
	Sunday	25-Aug-19	
	Day 1	26-Aug-19	statement of Bornoppenheimer approximation, Degrees of freedom.
	Day 2	27-Aug-19	Diatomic molecules
	Day 3	28-Aug-19	Energy levels of rigid rotator (semi-classical principles),
	Day 4	29-Aug-19	Energy levels of rigid rotator (semi-classical principles),
<b>8th Week</b>	Day 5	30-Aug-19	Practicals
	Day 6	31-Aug-19	selection rules
	Sunday	01-Sep-19	
	Day 1	02-Sep-19	selection rules
	Day 2	03-Sep-19	spectral intensity distribution using population distribution
	Day 3	04-Sep-19	determination of bond length
<b>9th Week</b>	Day 4	05-Sep-19	qualitative description of non-rigid rotor,
	Day 5	06-Sep-19	Practicals
	Day 6	07-Sep-19	isotope effect
	Sunday	08-Sep-19	
	Day 1	09-Sep-19	Infrared spectrum
	Day 2	10-Sep-19	Energy levels of simple harmonic oscillator
<b>10th Week</b>	Day 3	11-Sep-19	Energy levels of simple harmonic oscillator
	Day 4	12-Sep-19	selection rules
	Day 5	13-Sep-19	Practicals
	Day 6	14-Sep-19	pure vibrational spectrum,
	Sunday	15-Sep-19	
	Day 1	16-Sep-19	intensity, determination of force constant and qualitative
<b>11th Week</b>	Day 2	17-Sep-19	relation of force constant and bond energies,
	Day 3	18-Sep-19	effects of anharmonic motion
	Day 4	19-Sep-19	isotopic effect on the spectra
	Day 5	20-Sep-19	Practicals
	Day 6	21-Sep-19	Inter-class competition
	Sunday	22-Sep-19	
<b>12th Week</b>	Day 1	23-Sep-19	Holiday
	Day 2	24-Sep-19	Concept of polarizability
	Day 3	25-Sep-19	pure rotational spectra of diatomic molecules
	Day 4	26-Sep-19	pure vibrational Raman spectra of diatomic molecules
	Day 5	27-Sep-19	Practicals
	Day 6	28-Sep-19	pure vibrational Raman spectra of diatomic molecules
<b>13th Week</b>	Sunday	29-Sep-19	
	Day 1	30-Sep-19	selection rules
	Day 2	01-Oct-19	Quantum theory of Raman spectra
	Day 3	02-Oct-19	Holiday
	Day 4	03-Oct-19	Limitations of valence bond theory
	Day 5	04-Oct-19	Practicals
<b>14th Week</b>	Day 6	05-Oct-19	an elementary idea of crystal-field theory
	Sunday	06-Oct-19	
	Day 1	07-Oct-19	crystal field splitting in octahedral complexes
	Day 2	08-Oct-19	Holiday
	Day 3	09-Oct-19	crystal field splitting in tetrahedral complexes
	Day 4	10-Oct-19	crystal field splitting in square planar complexes
<b>15th Week</b>	Day 5	11-Oct-19	Practicals
	Day 6	12-Oct-19	factors affecting the crystal-f ield parameters
	Sunday	13-Oct-19	
	Day 1	14-Oct-19	Thermodynamic and Kinetic Aspects of Metal Complex
	Day 2	15-Oct-19	Thermodynamic and Kinetic Aspects of Metal Complex
	Day 3	16-Oct-19	A brief outline of thermodynamic stability of metal complexes
<b>16th Week</b>	Day 4	17-Oct-19	A brief outline of thermodynamic stability of metal complexes
	Day 5	18-Oct-19	Practicals
	Day 6	19-Oct-19	factors affecting the stability,
	Sunday	20-Oct-19	
	Day 1	21-Oct-19	factors affecting the stability,
	Day 2	22-Oct-19	substitution reactions of square planar complexes of Pt(II).
<b>16th Week</b>	Day 3	23-Oct-19	substitution reactions of square planar complexes of Pt(II).
	Day 4	24-Oct-19	Vacations
	Day 5	25-Oct-19	Vacations
	Day 6	26-Oct-19	Vacations
	Sunday	27-Oct-19	Vacations
	Day 1	28-Oct-19	Vacations
<b>16th Week</b>	Day 2	29-Oct-19	Vacations
	Day 3	30-Oct-19	Vacations
	Day 4	31-Oct-19	Group Discussion
	Day 5	01-Nov-19	Holiday

	Day 6	02-Nov-19	Exam Question Series
<b>17th Week</b>	Sunday	03-Nov-19	
	Day 1	04-Nov-19	Group Discussion
	Day 2	05-Nov-19	Exam Question Series
	Day 3	06-Nov-19	Group Discussion
	Day 4	07-Nov-19	Exam Question Series
	Day 5	08-Nov-19	Practicals
	Day 6	09-Nov-19	Class Test
<b>18th Week</b>	Sunday	10-Nov-19	
	Day 1	11-Nov-19	Class Test
	Day 2	12-Nov-19	Holiday
	Day 3	13-Nov-19	Class Test
	Day 4	14-Nov-19	Class Test
	Day 5	15-Nov-19	Practicals
	Day 6	16-Nov-19	Class Test
<b>19th Week</b>	Sunday	17-Nov-19	
	Day 1	18-Nov-19	Class Test