THE AIR FORCE SCHOOL : SUBROTO PARK : DELHI CANTT-110010

Class – XI

Sub: CHEMISTRY

Weekly Syllabus

Academic Session 2023-24

Month	Week	Dates		Days	No of Periods	Chapter	Contents	Syllabus
Apr-23	IV	17-21		05				
	V	24-29	**29-Working Saturday (Student)** **29 – Parent Orientation VI & IX**	06				
May-23	I	01-05	**05 – Budha Purnima** **01-04 : ES-1 (XII)/ CT-1 (X)**	04				**ES-1 (XII)/ CT-1 (X)** **Date: 01-08 May**
	II	08-12	**08 : ES-1 (XII)/ CT-1 (X)** **11,12 – The Quest**	05				
	III	15-20	**20- Working Saturday (Open House X & XII)**	06				
******* SUMMER BREAK 22 MAY -30 JUN 2023 ********								
Jul-23	I	01-	01- School reopens for staff	01				**PT-I** **Class VI-X Date: 07 Jul – 19Jul**
	II	03-07		05		Unit I: Some Basic Concepts of Chemistry	General Introduction: Importance and scope of Chemistry. Nature of matter, laws of	**ES-2 (XII): 07 Jul – 19Jul**

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							chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, .	
	III	10-14		05		Unit II: Structure of Atom	stoichiometry and calculations based on stoichiometry Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light	
	IV	17-22	**22 – Working Saturday (Students)**	06			de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals	
	V	24-28	**29-Muharram**	05			rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals.	

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	VI	31		01			revision	
Aug-23	I	01-05	**05 – Working Saturday (Open House (VI-X), XII)**	05		Unit III: Classification of Elements and Periodicity in Properties	Significance of classification, brief history of the development of periodic table modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii,	
	II	07-11		05			Ionization enthalpy, electron gain enthalpy, electronegativity, valency . Nomenclature of elements with atomic number greater than 100	
	III	14-18	**15 – Independence Day**	04				
	IV	21-26	**24,25-Class Test** **26-Working Saturday (Students)** **26-Annual Prize Distribution**	06				**ES-1 (XI): 21 Aug – 25 Aug** **ES-1 (XI)*** **Date 22 Aug** Unit I: Some Basic Concepts of Chemistry Unit2: structure of atom (till 2.4.2.)
	V	28-32	**30-Raksha Bandhan** **28,29 -Class Test**	03				
Sep-23	I	01	**01 -Class Test**	01				
	II	04-08	**07-Janmashtami**	04		Mid Term/ HYE Exam		**Mid Term (PT-II)/ HYE** **Date 11-23 Sep**
	III	11-16	**16 – Working Saturday (Students)**	06				
	IV	18-23	**23 – Working Saturday**	06				

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			(Students)					Unit II: Structure of Atom Unit III: Classification of Elements and Periodicity in Properties
	V	25-30	**28-Milad-un-Nabi**	04			Distribution and discussion of paper	
Oct-23	II	02-07	**02-Mahatma Gandhi's Birthday** **07-Annual Prize Distribution**	05		Unit IV: Chemical Bonding and Molecular Structure	Valence electrons, ionic bond, covalent bond, , bond parameters, Lewis's structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory	
	III	09-14	**14- Working Saturday(Open House VI-XII)**	06			concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), Hydrogen bond.	
	IV	16-20		05		Unit VI: Chemical Thermodynamics	Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions.	
	V	23-27	**23– Autumn Break** **24- Dussehra** **28-Maharishi Valmiki's Birthday**	03			First law of thermodynamics - internal energy and enthalpy, heat capacity and specific heat,	
	VI	30-31		02			measurement of ΔU and ΔH, Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation	
***** Autumn Break 23 Oct 2023 *****								
Nov-23	I	01-04	**01– KarwaChouth** **04 – Working Saturday**	03			atomization, sublimation, phase transition, ionization, solution and dilution. Second law of	

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			(Students)				Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes,	
	II	06-10	**07 – Annual Day**	05			criteria for equilibrium. Third law of thermodynamics (brief introduction	
	III	13-18	**11-15 – Diwali Break**	03		Unit VII: Equilibrium	Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant,	**PT-III (VI-VIII):**17 Nov-14 Dec **PT-III (IX & X)**: 20 Nov-30 Nov **ES-2 (XI):**21 Nov-14 Dec **MPB (XII):**20 Nov-30 Nov Unit IV: Chemical Bonding and Molecular Structure Unit VI: Chemical Thermodynamics
	IV	20-24		05			factors affecting equilibrium - Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution	
	V	27-30	**27 – Guru Nank's Birthday**	03			, Henderson Equation, solubility product, common ion effect (with illustrative examples). Henderson Equation, solubility product, common ion effect (with illustrative examples ,	
Dec-23	**I**	01-02	**01,02 – Annual Athletic Meet**	02			revision	
	II	04-09	**09 – Sports Day**	06		Unit VIII: Redox	Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms	

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						Reactions	of loss and gain of electrons and change in oxidation number,	
	III	11-16	**16-Working Saturday, Open House (IX,X & XII)**	06		Unit XII: Organic Chemistry -Some Basic Principles and Techniques	applications of redox reactions. General introduction, , classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond:	
	IV	18-22	**20-22 – TAFS MUN** **24,25 – Christmas Holidays**	05			methods of purification, qualitative and quantitative analysis	
***** Winter Break from 26 Dec to 05 Jan 2024 *****								
Jan-24	I	08-12		05		Unit XIII: Hydrocarbons	Classification of Hydrocarbons Aliphatic Hydrocarbons: Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties,	**Pre-Board (X & XII):** **09 Jan-23 Jan**
	II	15-20	**20-Working Saturday, Open House (VI-VIII, XI)**	06			chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. .	
	III	22-27	**26-Republic Day** **27-Farewell XII**	05			Alkenes - Nomenclature, the structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect),	

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							ozonolysis, oxidation, mechanism of electrophilic addition Alkynes - Nomenclature, the structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water	
	IV	29-31		03			revision	
Feb-24	I	01-03	**01,02- Class Test** **03-Working Saturday, Citation Ceremony, Open House (X& XII)**	03			revision	
	II	05-09	**05-08- Class Test**	05			revision	**Annual Exam Class IX & XI – 07 Feb-21 Feb 2023**
	III	12-16		05				
	IV	19-23		05				
	V	26-29		04				
Mar-24	**Annual Exam Classes VI-VIII – 26 Feb-11 Mar 2024**							

Note: The examination syllabus as mentioned above is to be considered Tentative. The final syllabus for each exam will be uploaded on the website along with the Date Sheet at the time of the examination.