

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

Class – XI

Sub: CHEMISTRY

Weekly Syllabus (Tentative)

Academic Session 2024-25

Month	Week	Dates		Days	No of Periods	Chapter	Contents	Syllabus
Mar 24	Block Teaching							
Apr-24	I	01-06	06-Working Saturday (Staff)	05				
	II	08-12	11 – Id-ul-Fitr	04				
	III	15-19	14 - Ambedakar Jayanti 17 – Ram Navami 21 - Mahavir Jayanti	04		Unit I: Some Basic Concepts of Chemistry	General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules.	
	IV	22-27	27-Working Saturday (Student)	06			Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions	
	V	29-30		02			stoichiometry and calculations based on stoichiometry	
May-24	I	01-03	01-03 : ES-1 (XII)/ CT-1 (X)	03				ES-1 (XII)/ CT-1 (X) Date: 01-07 May

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	II	06-10	06-07 : ES-1 (XII)/ CT-1 (X) 09,10 – The Quest	05		Unit II: Structure of Atom	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 and its limitations, concept of shells and subshells, dual nature of matter and light	
	III	13-18	18- Working Saturday (Open House X & XII)	06			de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals	
***** SUMMER BREAK 20 MAY -30 JUN 2024 *****								
Jul-24	I	01-06	01- School reopens for staff 06-Working Saturday (Student)	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	PT-I Class VI-X Date: 05 Jul – 12Jul ES-2 (XII): 05 Jul – 12Jul
	II	08-12		05				
	III	15-19	17-Muharram	04				
	IV	22-27	27 – Working Saturday (Students)	06		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,	

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	V	29-31		03			, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Nomenclature of elements with atomic number greater than 100	
Aug-24	I	01-03	03 – Working Saturday (Open House (VI-X), XII)	03			Ionization enthalpy, electron gain enthalpy, electronegativity, valency	
	II	05-09		05			REVISION	
	III	12-16	15 – Independence Day	04				
	IV	19-23	19-Raksha Bandhan	04				ES-1 (XI): Unit1: Some Basic Concepts of Chemistry TENTATIVELY
	V	26-31	26-Janmashtami 31-Working Saturday (Students) 31-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	
Sep-24	I	02-06		05			concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea	

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							only), Hydrogen bond	
	II	09-14	14 – Working Saturday (Students)	06		Mid Term/ HYE Exam		Mid Term (PT-II)/ HYE Date 09-24 Sep Unit1: Some Basic Concepts of Chemistry Unit II: Structure of Atom Unit III: Classification of Elements and Periodicity in Properties
	III	16-21	16-Milad-un-Nabi 21 – Working Saturday (Students)	05				
	IV	23-27		05				
	V	30		01				
Oct-24	II	01-05	02-Mahatma Gandhi's Birthday 05-Annual Prize Distribution	04		Unit VI: Chemical Thermodynamics	Concepts of System and types of systems, surroundings, work, heat, energy. extensive and intensive properties, state functions	
	III	07-12	09-13– Autumn Break 12- Dussehra	02			First law of thermodynamics - internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH ,	
	IV	14-19	17-Maharishi Valmiki's Birthday 19 – Working Saturday (Open House VI-XII)	05			Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation atomization, sublimation, phase transition, ionization, solution and dilution	
	V	21-25	20– Karwa Chouth	05			. Second law of Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes. criteria for equilibrium	
	VI	28-31	30-03 Nov – Diwali Break	02			. Third law of thermodynamics (brief introduction)	

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*** Autumn Break 09-13 Oct 2024 ***								
Nov-24	I	04-09	09 – Working Saturday (Students)	06		Unit VII: Equilibrium	Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle	ESII Unit IV: Chemical Bonding and Molecular Structure Unit VI: Chemical Thermodynamics
	II	11-15	12 – Annual Day 15 – Guru Nank's Birthday	04			, 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 Henderson Equation, solubility product, common ion effect (with illustrative examples). Henderson Equation, solubility product, common ion effect (with illustrative examples	
	III	18-22		05		Unit VIII: Redox Reactions	, REVISION Concept of oxidation and reduction, redox reactions, oxidation number balancing redox reactions , in terms of loss and gain of electrons and change in oxidation number	PT-II (VI-VIII): 19 Nov-10 Dec PT-III (IX): 19 Nov-10 Dec PT-III (X): 14 Nov-25 Nov MPB (XII): 14 Nov-25 Nov
	IV	25-30	29,30 – Annual Athletic Meet	06			applications of redox reactions.	
Dec-24	I	02-07	07 – Sports Day	06			Competitive transfer of electrons Types of redox reactions	
	II	09-13		05		Unit XII: Organic	General introduction, , classification and IUPAC nomenclature of organic	

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						Chemistry -Some Basic Principles and Techniques	compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond	
	III	16-21	21-Working Saturday, Open House (X & XII)	06			methods of purification, qualitative and quantitative analysis	
	IV	23	24,25 – Christmas Holidays	01				
*** Winter Break from 26 Dec to 04 Jan 2025 ***								
Jan-25	I	06-10		05		Unit XIII: Hydrocarbons	Classification of Hydrocarbons Aliphatic Hydrocarbons: Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties	
	II	13-18	18-Working Saturday, Open House (VI-IX, XI)	06			, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. Alkenes - Nomenclature, the structure of double bond (ethene), geometrical isomerism, physical properties	
	III	20-25	25-Citation Ceremony 25-Open House XII 26-Republic Day	06			, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect ozonolysis, oxidation, mechanism of electrophilic addition	

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							Alkynes - Nomenclature, the structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes	
	IV	27-31		05			Addition reaction of - hydrogen, halogens, hydrogen halides and water Aromatic hydrocarbons	
Feb-25	I	01	01 – Farewell XII 01- Open House X	01				
	II	03-07		05				Annual Exam Class IX & XI – 05 Feb-19 Feb 2025 COMPLETE SYLLABUS
	III	10-14		05				
	IV	17-22	22-Working Saturday (students)	06				
	V	24-28	26-Maha Shivratri	04				
Mar-25	Annual Exam Classes VI-VIII – 25 Feb-10 Mar 2025							

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.