

	<p>UNIT-3. Classification of elements & periodicity in properties</p> <p>Unit Test-1</p>	<p>and completely filled orbitals stoichiometry.</p> <p>Classification of Elements and Periodicity in Properties: Modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.</p> <p>Unit-1,2</p>
August	<p>UNIT-3. Classification of elements & periodicity in properties</p> <p>UNIT-4 Chemical bonding & molecular structure</p> <p>UNIT-8 Redox reaction</p>	<p>Classification of Elements and Periodicity in Properties: Modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.</p> <p>Chemical Bonding and Molecular Structure: Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, 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.</p> <p>Redox Reactions: 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.</p>
September	UNIT- 9 Hydrogen	Hydrogen: Position of hydrogen in periodic table, occurrence, isotopes, hydrides-ionic

	UNIT-12 Organic Chemistry some basic principles and Techniques	covalent and interstitial; physical and chemical properties of water, heavy water, hydrogen as a fuel Organic Chemistry: Some basic Principles and Techniques: General introduction, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electrometric effect, resonance and hyper conjugation. Hemolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.
October	Term 1 Exam UNIT-5 States of matter	Unit-1,2,3,4,8,9,12 States of Matter: Gases and Liquids: Three states of matter, intermolecular interactions, types of bonding, melting and boiling points, role of gas laws in elucidating the concept of the molecule, Boyle's law, Charles law, Gay Lussac's law, Avogadro's law, ideal behaviour, empirical derivation of gas equation, Avogadro's number, ideal gas equation and deviation from ideal behaviour.
November	UNIT-6 Chemical Thermodynamics	Chemical Thermodynamics: Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics -internal energy and enthalpy, measurement of ΔU and ΔH , Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy change for spontaneous and nonspontaneous processes. Third law of

	UNIT-7 Equilibrium	thermodynamics (brief introduction). Equilibrium: Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, 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, buffer solution, solubility product, common ion effect (with illustrative examples).
December	UNIT-7 Equilibrium (cont'd) UNIT-10 S-Block Elements	Equilibrium: Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, 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, buffer solution, solubility product, common ion effect (with illustrative examples). s -Block Elements: Group 1 and Group 2 Elements -General introduction, electronic configuration, occurrence, anomalous properties of the first element of each group, diagonal relationship, trends in the variation of properties (such as ionization enthalpy, atomic and ionic radii), trends in chemical reactivity with oxygen, water, hydrogen and halogens, uses.
January	UNIT-10 S-Block Elements (cont'd)	s -Block Elements: Group 1 and Group 2 Elements -General introduction, electronic configuration, occurrence, anomalous properties of the first element of each group, diagonal relationship, trends in the variation of properties (such as ionization enthalpy, atomic and ionic radii), trends in chemical reactivity with oxygen, water, hydrogen and halogens, uses. Some p -Block Elements: General Introduction

	UNIT-11 P-Block Element	to p -Block Elements Group 13 Elements: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous properties of first element of the group, Boron - physical and chemical properties. Group 14 Elements: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous behaviour of first elements. Carbon-catenation, allotropic forms, physical and chemical properties.
	Unit Test-2	Unit-5,6,7
February	UNIT-13 Hydrocarbon	Hydrocarbons: Classification of Hydrocarbons Aliphatic Hydrocarbons: Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions. Alkenes - Nomenclature, 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), ozonolysis, oxidation, mechanism of electrophilic addition. Alkynes - Nomenclature, 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. Aromatic Hydrocarbons: Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of functional group in monosubstituted benzene. Carcinogenicity and toxicity.
March	Term II Exam	Unit-5,6,7,10,11,13

ASSESSMENTS SYLLABUS

1. Periodic Assessment-1 (July-August)

UNIT 1 – Some Basic Concepts of Chemistry

UNIT 2-Structure of Atom

2. Term 1 End Exam

UNIT 1 – Some Basic Concepts of Chemistry

UNIT 2 – Structure of Atom

UNIT 3 – Classification of elements and periodicity in properties

UNIT 4 – Chemical Bonding and Molecular Structure

UNIT 8-Redox Reaction

UNIT 9-Hydrogen

UNIT 12-Organic Chemistry-Some Basic Principles and Techniques

3. Periodic Assessment-1 (Jan)

UNIT 5 – States Of Matter

UNIT 6- Chemical Thermodynamics

UNIT 7- Equilibrium

4. Term 2 End Exam (March)

UNIT 5 – States Of Matter

UNIT 6- Chemical Thermodynamics

UNIT 7- Equilibrium

UNIT 10-The s block elements

UNIT 11-The p block elements

UNIT 13-Hydrocarbons

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