

**CHOITHRAM SCHOOL, MANIK BAGH, INDORE**

**ANNUAL CURRICULUM PLAN SESSION 2017 – 2018**

**CLASS: XI**

**SUBJECT: CHEMISTRY**

Month & Working Days	Theme/ Sub-theme	Learning Objectives		Activities & Resources	Expected Learning Outcomes	Assessment
		Subject Specific (Content Based)	Behavioural (Application based)			
<b>June/12</b>	<b>Some basic concepts of chemistry</b> Importance and scope of chemistry, Matter and its classification, element, compound and mixture. Law of conservation, Law of constant proportion, Law of multiple proportion. postulates of Daltons atomic theory, Relative atomic mass, calculation of molecular mass, formula mass, Concept of mole, Ways of expressing concentration such as strength, molarity, molality, mass and volume percentage	<b>After studying this unit students will be able to</b> 1. define chemistry 2. describe the terms mole and molar mass 3. express concentration of solution in various ways like strength, molarity, molality, mass %, volume%, ppm and mole fraction 4. determine empirical formula and molecular formula for a compound from the given experimental data; 5. develop logical thinking through various problems,	1. Appreciate the role of chemistry in different spheres of life like supply of food, contribution to better health and sanitation, saving environment, increase in comforts, pleasure and luxuries, synthetic fibre, building materials etc. 2. Appreciate the importance of concentration of solution in preparing injections, saline or solutions for researches. etc.	Volumetric analysis/laboratory equipment Previous years question papers, practice work sheets.	students have learnt <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> explain the characteristics of three states of matter; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> classify different substances into elements, compounds and mixtures; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> explain various laws of chemical combination; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> appreciate significance of atomic mass, average atomic mass, molecular mass and formula mass; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> describe the terms – mole and molar mass; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> calculate the mass per cent of different elements	Assignment Half yearly examination

	,ppm ,mole fractions and stoichiometric calculation and limiting reagent.	6.perform stoichiometric calculation. 7. explain various laws of chemical Combination			constituting a compound; □ □ □ perform the stoichiometric calculations. 9. students learnt that though chemistry can be regarded as greatest benefactor of humanity, yet it can prove to be a blessing or a curse for humanity depends upon the uses to which it is put and how a relative balance is maintained between benefits and problem caused by progress of chemistry	
July/14	Structure of atom Discovery of electron , discovery of proton, Thomson's atomic model , Rutherford's scattering experiment, wave nature of EM radiations, photoelectric effect, black body radiation,atomic	<b>After studying this unit students will be able to</b> <ul style="list-style-type: none"> <li>Know the discoveries done in the field of structure of atom like : discovery of electron, proton and neutron.</li> <li>Know various</li> </ul>	<b>After studying this unit students will be able to</b> <ul style="list-style-type: none"> <li>Observe details in a more scientific way and will become more open in expressing their ideas after learning how the scientists draw conclusions through a very small detail.</li> <li>Appreciate and Demonstrate the use of various low frequency and high frequency waves to situations like detection of fractures by X-rays , relieve of muscle pain</li> </ul>	<b>Problem solving Writing electronic configurations of various molecules and ions</b>	Students have learnt : <ul style="list-style-type: none"> <li>the discoveries done in the field of structure of atom like : discovery of electron, proton and neutron.</li> <li>various theories put forth for structures of atom.</li> <li>the nature of</li> </ul>	<b>Assignment and</b> Half yearly examination

	<p>spectra, Bohr's model of atom, Dual nature of atom , Heisenberg's uncertainty principle, quantum mechanical model , quantum numbers, Pauli's exclusion principle, Aufbau's principle, electronic configuration of ions, Hund's rule of maximum multiplicity.</p>	<p>theories put forth for structures of atom.</p> <ul style="list-style-type: none"> <li>• Understand the nature of EM waves and terminologies associated with it.</li> <li>• Understand the process of radioactivity.</li> <li>• Know and understand the black body radiations and photoelectric effect.</li> <li>• Learn the study of atomic spectra and its types .</li> <li>• Relate the failure of one atomic model to overcome the drawbacks of the same to frame a new theory.</li> </ul>	<p>by infra red etc.</p> <ul style="list-style-type: none"> <li>• Develop a sense of maturity regarding failures in life as to how one failure leads to a new path of success.</li> <li>• Develop an attitude to simplify things and frame some logical norms for any kind of dealings in life like filling of electrons in a very organized and a set norm does not lead to any confusion.</li> </ul>		<p>EM waves and terminologies associated with it.</p> <ul style="list-style-type: none"> <li>• the process of radioactivity.</li> <li>• the black body radiations and photoelectric effect.</li> <li>• the study of atomic spectra and its types .</li> <li>• To relate the failure of one atomic model to overcome the drawbacks of the same to frame a new theory.</li> <li>• Heisenberg's uncertainty principle and have enhanced the ability to solve numericals.</li> <li>• the principle of working out the electronic</li> </ul>	
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		<ul style="list-style-type: none"> <li>• Know and understand Heisenberg's uncertainty principle and enhance the numerical solving ability.</li> <li>• Know the principle of working out the electronic configuration and will be able to understand various properties of a number atoms .</li> </ul>			<p>configuration and will be able to understand various properties of a number atoms .</p> <ul style="list-style-type: none"> <li>• To Develop a sense of maturity regarding failures in life as to how one failure leads to a new path of success.</li> <li>• To Appreciate and Demonstrate the use of various low frequency and high frequency waves to situations like detection of fractures by X-rays , relieve of muscle pain by infra red etc.</li> <li>• Atomic spectra : Emission spectra , Absorption spectra ,</li> </ul>	
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					<p>continuous spectra, line spectra , band spectra.</p> <ul style="list-style-type: none"><li>• Failure of Rutherford's model of atom , overcoming the failure through Bohr's model for hydrogen atom, deriving mathematical relation of energy of an electron by Bohr's theory, numerical solving to calculate the energy of an electron .</li><li>• Dual behaviour of matter : de Broglie Equation, its derivation , and numericals</li><li>• Heisenberg's uncertainty principle , its significance and numericals</li></ul>	
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					<p>related to it .</p> <ul style="list-style-type: none"><li>• Quantum mechanical model of an atom ,Quantum numbers , Pauli's exclusion principle: no two electrons in an atom can have all the four quantum numbers same, Aufbau's principle : in ground state of an atom , the electrons are added progressively to the various orbitals in increasing order of energies. Hund's rule of maximum multiplicity.</li><li>• Stability of completely filled and Half-filled Orbitals : configuration of various atoms</li></ul>	
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					and ions will be discussed along with their stabilities due to exchange energy and symmetrical distribution of electrons.	
<b>July + aug 08</b>	<b>Classification of elements</b> 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, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.	<b>After studying this unit students will be able to</b> <ul style="list-style-type: none"> <li>Understand the need of classifying elements.</li> <li>Know how the concept of grouping elements in accordance to their properties led to the development of Periodic Table.</li> <li>Compare the positive points and drawbacks of previous models of classification of elements e.g. laws of triads and octaves, Mendeleev’s law</li> <li>Appreciate the utility of Mendeleev’s</li> </ul>	<b>After studying this unit students will be able to</b> <ul style="list-style-type: none"> <li>understand and appreciate the importance of classification and will learn how to proceed to study, analyze and solve a problem through a systematic and sequential approach. They will develop the skills of analysis, classification (sorting) and critical thinking.</li> <li>They will also develop analytical and critical thinking through thoughtful study of the pattern of the classification and the properties of elements followed by discussion on normal &amp; exceptional trends in the properties. Through study and discussion on work done by the scientists, they will be motivated to follow a path of optimum values and life skills so that</li> </ul>	<b>Problem solving activity</b>	<b>Expected Learning Outcomes:</b> <ul style="list-style-type: none"> <li>Students have developed an understanding about the need &amp; importance of classification of elements and knowledge of historical background of the classification of elements.</li> <li>With the help of the above information and subsequent discussion held thereon they have developed an insight into significance of having skills of classifying &amp;</li> </ul>	Assignment, practice questions

		<p>periodic classification in designing of the modern periodic classification</p> <ul style="list-style-type: none"> <li>• understand the Periodic Law; understand the significance of atomic number and electronic configuration as the basis for periodic classification;</li> <li>• name the elements with <math>Z &gt; 100</math> according to IUPAC nomenclature;</li> <li>• classify elements into <i>s</i>, <i>p</i>, <i>d</i>, <i>f</i> blocks and learn their main characteristics;</li> <li>• recognize the periodic trends in physical and chemical properties of elements;</li> <li>• compare the reactivity of elements and correlate it with</li> </ul>	<p>they can get success in life.</p>		<p>arranging things systematically so that further studies become easier and effective.</p> <ul style="list-style-type: none"> <li>• They have developed the skills of analysis, sorting, arranging through the study of this chapter and now critically think before explaining reasons about particular pattern of classification.</li> <li>• Students can predict periodic position of elements and can predict probable trends in properties of the elements in terms of their metallic/ non-metallic nature, ionization enthalpy, size, electro affinity, electronegativity, nature of compounds etc.</li> <li>• They can explain</li> </ul>	
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		<p>their occurrence in nature;</p> <ul style="list-style-type: none"> <li>explain the relationship between ionization enthalpy and metallic character; use scientific vocabulary appropriately to communicate ideas related to certain important properties of atoms e.g., atomic/ionic radii, ionization enthalpy, electron gain enthalpy, electronegativity, valence of elements.</li> </ul>			<p>the periodic trends in the properties of the elements.</p>	
<p><b>Aug+ september/14days</b></p>	<p><b>Chemical bonding/</b> ionic ,covalent, coordinate bond. Lewis dot representation, various theories to explain geometry of molecules like VSEPR, VBT and MOT ,hybridization involving s,p,d,f orbital's, hydrogen bonding</p>	<p><b>After studying this unit students will be able to</b></p> <ul style="list-style-type: none"> <li>understand KÖssel-Lewis approach to chemical bonding;</li> <li>explain the octet rule and its limitations, draw Lewis structures of simple molecules;</li> <li>explain the formation of differenttypes of bonds;</li> <li>describe the VSEPR theory and predict the</li> </ul>	<p>Students will</p> <ul style="list-style-type: none"> <li>appreciate how chemical bonding keeps atoms together that are necessary for their existence.</li> <li>.Appreciate chemical bonds lends itself to discovering some important appreciation of our surroundings.</li> <li>Students will then be challenged to think about the chemical bonds that are essential to the</li> </ul>	<p>1.drawing electron dot structure 2.predicting and drawing shapes of organic compounds using VSEPR theory</p>	<p><b>Students have learnt</b></p> <p>1. KÖssel-Lewis approach to chemical bonding;</p> <ul style="list-style-type: none"> <li>the octet rule and its limitations, .to draw Lewis structures of simple molecules;</li> <li>to explain the formation of differenttypes of bonds;</li> <li>describe the VSEPR theory and predict the geometry of simple molecules;</li> </ul>	<p><b>Practice questions</b></p>

		<p>geometry of simple molecules;</p> <ul style="list-style-type: none"> <li>• explain the valence bond approach for the formation of covalent bonds;</li> <li>• predict the directional properties of covalent bonds;</li> <li>• explain the different types of hybridisation involving <i>s</i>, <i>p</i> and <i>d</i> orbitals and draw shapes of simple covalent molecules;</li> <li>• describe the molecular orbital theory of homonuclear diatomic molecules;</li> <li>• explain the concept of hydrogen</li> </ul>	<p>functioning of our body. What bonds exist among atoms within our bodies that are sustaining us?</p>		<ul style="list-style-type: none"> <li>• explain the valence bond approach for the formation of covalent bonds;</li> <li>• predict the directional properties of covalent bonds;</li> <li>• explain the different types of hybridisation involving <i>s</i>, <i>p</i> and <i>d</i> orbitals and draw shapes of simple covalent molecules;</li> <li>• describe the molecular orbital theory of homonuclear diatomic molecules;</li> <li>• explain the concept of hydrogen bonding</li> </ul> <p>student have learnt and appreciate that chemical bonds lends itself to discovering some important appreciation of our surroundings. For instance, understanding how the significant bonding of H<sub>2</sub>O leads to unique properties of water, chemical bonding occurs around us and in us leads to a description of the</p>	
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					processes necessary for our survival. If we're able to understand the bonds that result from electrons then we can understand the chemical reactions that take place that sustain us.	
september/06days	<p><b>Redox reaction/1.</b> oxidation ,reduction, redox reaction, oxidising agent, reducing agent . mechanism of redox reactions by electron transfer and oxidation numberconcept. identification of oxidant andreductant. classification of redox reaction into various types. balancing chemical equations</p>	<p><b>After studying this unit students will be able to</b></p> <ol style="list-style-type: none"> <li>1. define the terms oxidation ,reduction, redox reaction, oxidising agent, reducing agent .</li> <li>2. explain mechanism of redox reactions by electron transfer and oxidation numberconcept.</li> <li>3. use the concept of oxidation number to identify oxidant and reductant.</li> <li>4. classify redox reaction into various types.</li> <li>5. balance chemical equations using oxidation number and half reaction method.</li> </ol>	<p><b>After studying this unit</b> students will evaluate that like variable oxidation states variation in in life allow us to exhibit our various hidden character</p>	<ol style="list-style-type: none"> <li>1.Balancing of Redox reaction</li> <li>2.Problem solving activity</li> </ol>	<p><b>Students have learnt</b></p> <ol style="list-style-type: none"> <li>1.to define the terms oxidation ,reduction, redox reaction, oxidising agent, reducing agent .</li> <li>2. the mechanism of redox reactions by electron transfer and oxidation numberconcept.</li> <li>3.to use the concept of oxidation number to identify oxidant and reductant.</li> <li>4.to classify redox reaction into various types.</li> <li>5. to balance chemical equations using oxidation number and half reaction method.</li> <li>6.students have learnt to evaluate that like various oxidation states of atoms variation in</li> </ol>	<p><b>Practice questions will be given</b></p>

					life also allow us to exhibit our various hidden character	
<b>September +October/07</b>	<b>Equilibrium i/dynamic nature of equilibrium ,law of chemical equilibrium</b> .Dynamic nature of equilibrium., law of equilibrium. expression for eq. constant. factors effecting equilibrium.	<b>After studying this unit students will be able to</b> 1. identify dynamic nature of equilibrium. 2. state the law of equilibrium. 3. write expression for eq. constant. 4. explain various factors that effect equilibrium.	Children will be able to: Appreciate and explain the scientific reason behind the following phenomena from daily life: ➤ Clothes dry quicker when the fan is on or if there is a breeze. ➤ In Chennai or Kolkata (Coastal areas) why do we sweat more on a humid day? ➤ How is oxygen carried by haemoglobin in blood? ➤ How does blood help in the removal of CO <sub>2</sub> from the tissues? ➤ How do sweet substances cause tooth decay? On the basis of their knowledge and understanding they will be able to create awareness about above phenomena and hence cope up and guide people to do the same in justified manner.	i.Numerical based on the topic 2.concentration time graph	Students have learnt .to identify dynamic nature of equilibrium. 2. to state the law of equilibrium. 3. to write expression for eq. constant. 4. to explain various factors that effect equilibrium. 5.Appreciate and explain the scientific reason behind the various phenomena from daily life: They developed awareness about these phenomena and hence cope up and guide people to do the same in justified manner.	<b>Practice questions</b>
<b>November/07days</b>	<b>. Equilibrium ii</b>	<b>After studying this unit student will be able to</b> .classify substance as acids or bases .describe pH scale. .Understand common ion effect and	1. They will apply their knowledge of significance of pH in daily life 2. They will evaluate the importance of equilibrium in life so as to maintain balance in various aspects and stages of life.	<b>Qualitative analysis</b>	Students have learnt 1. to classify substance as acids or bases 2.describe pH scale. 3.to Calculate solubility product 4. apply concept of common ion effect and	<b>assignment</b>

		<p>solubility product.          .Calculate solubility product.          .apply concept of common ion effect and solubility product in qualitative analysis</p>			<p>solubility product in daily life like in purification of salt          5they also developed various life skills and values  <b>6. to</b> apply their knowledge of significance of pH in daily life while choosing eatables, drinks, cosmetics and medicines.</p>	
<b>05days</b>	<p><b>Thermodynamics</b>          : system and surroundings          close, open and isolated systems;          internal energy, work and heat;          the first law of thermodynamics          calculation of energy changes as work and heat contributions in chemical systems;          state functions: <math>U</math>, <math>H</math>, <math>\Delta U</math> and <math>\Delta H</math>;          standard states for <math>\Delta H</math>;          enthalpy changes for</p>	<p><b>After studying this unit student will be able to</b>  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> explain the terms : system and surroundings          2.discriminate between close, open and isolated systems;          3.explain internal energy, work and heat;  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> state first law of thermodynamics and express it mathematically;  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> calculate energy changes as work and heat contributions</p>	<p>Children will be able to –          1. Appreciate and realize the justified use of energy and will create awareness about conservation of energy          2. Devise new techniques to conserve energy and start using renewable means of energy          3. The concept of change in state will make them realize about the importance of various factors, personal qualities, family, friends etc. to have a desirable transformation in life          4. They will be able to channelize their energy in productive and useful fields and works.          5. The concept of entropy shall make them appreciate the importance of discipline, regularity, order while working in any field to complete a</p>	<p><b>Numerical Problem solving activity</b></p>	<p>Students have learnt .to  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> explain the terms system and surroundings          2.discriminate between close ,open and isolated systems;          3.explain internal energy, work and heat;  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> state first law of thermodynamics and express it mathematically;  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> calculate energy changes as work and heat contributions in chemical systems;          explain state functions: <math>U</math>, <math>H</math>.</p>	<p><b>Assignment,practice questions and worksheets</b></p>

	<p>various types of reactions; Hess's law of constant heat summation; extensive and intensive properties; spontaneous and nonspontaneous processes; entropy as a thermodynamic state function and apply it for spontaneity; Gibbs energy change (<math>\Delta G</math>); <input type="checkbox"/> establish relationship between <math>\Delta G</math> and spontaneity, <math>\Delta G</math> and equilibrium constant.</p>	<p>in chemical systems; explain state functions: <math>U</math>, <math>H</math>. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> correlate <math>U</math> and <math>\Delta H</math>; 7.define standard states for <math>\Delta H</math>; 8.calculate enthalpy changes for various types of reactions; 9.state and apply Hess's law of constant heat summation; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> differentiate between extensive and intensive properties; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> define spontaneous and nonspontaneous processes; 11.explain entropy as a thermodynamic state function and apply it for spontaneity; 12.explain Gibbs energy change (<math>\Delta G</math>); <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> establish relationship between <math>\Delta G</math> and spontaneity,</p>	<p>task.</p>		<p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> correlate <math>U</math> and <math>\Delta H</math>; 7.define standard states for <math>\Delta H</math>; 8.calculate enthalpy changes for various types of reactions; 9.state and apply Hess's law of constant heat summation; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> differentiate between extensive and intensive properties; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> define spontaneous and nonspontaneous processes; 11.explain entropy as a thermodynamic state function and apply it for spontaneity; 12.explain Gibbs energy change (<math>\Delta G</math>); <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> establish relationship between <math>\Delta G</math> and spontaneity, <math>\Delta G</math> and equilibrium constant. 14. to use energy judiciously.</p>	
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		$\Delta G$ and equilibrium constant.			15. developed various skills and values required to achieve success in life .	
<b>10days</b>	<b>Organic chemistry some basic concepts</b>	<p><b>After studying this unit student will be able to</b></p> <p>1. understand reasons for tetra valence of carbon and shapes of organic molecules;</p> <p><input type="checkbox"/> <input type="checkbox"/> write structures of organic molecules in various ways; <input type="checkbox"/> classify the organic compounds;</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> name the compounds according to IUPAC system of nomenclature and also derive their structures from the given names;</p> <p><input type="checkbox"/> <input type="checkbox"/> understand the concept of organic reaction mechanism;</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> explain the influence of electronic displacements on structure and reactivity of organic compounds;</p> <p><input type="checkbox"/> <input type="checkbox"/> recognize the types of organic</p>	Student will use various methods to purify organic compounds and appreciate the use of this technique in day to day life for various purposes and for welfare of society.	Writing names of organic compounds	<p><b>Students have learnt</b></p> <p>1. the reasons for tetra valence of carbon and shapes of organic molecules;</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> write structures of organic molecules in various ways; <input type="checkbox"/> classify the organic compounds;</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> name the compounds according to IUPAC system of nomenclature and also derive their structures from the given names;</p> <p><input type="checkbox"/> the concept of organic reaction mechanism;</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> explain the influence of electronic displacements on structure and reactivity of organic compounds;</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> recognize the types of organic Reactions.</p> <p>8. Student have learnt how the pure substances are obtained by using</p>	<b>Assignment/worksheets</b>

		Reactions.			various techniques and appreciate the use of these technique in day to day life like separating drugs from blood,use of fractional distillation in separating crude oil in petroleum industry,use of TLC technique in forensic department in order to solve suspicious matter.	
<b>December 10days</b>	<b>HYDROCARBON</b>	<p><b>After studying this unit students will be able to</b></p> <ul style="list-style-type: none"> <li>□ □ name hydrocarbons according to IUPAC system of nomenclature;</li> <li>□ □ □ recognize and write structures of isomers of alkanes, alkenes, alkynes and aromatic hydrocarbons;</li> <li>□ □ □ learn about various methods of preparation of hydrocarbons.</li> <li>□ □ distinguish between alkanes, alkenes, alkynes and aromatic hydrocarbons on the</li> </ul>	<p><b>After studying this unit students will be able to</b></p> <ol style="list-style-type: none"> <li>1. to encourage judicious use of non renewable sources</li> <li>2. to appreciate use of hydrocarbons for health care and industrial purpose</li> <li>3. to discourage excessive use of harmful chemicals and to think for the alternating solution .</li> </ol>	<ol style="list-style-type: none"> <li>1. writing names of hydrocarbons</li> <li>2. Draw isomers of hydrocarbons</li> </ol>	<p><b>Students have learnt</b></p> <ul style="list-style-type: none"> <li>□ □ □ □ □ name hydrocarbons according to IUPAC system of nomenclature;</li> <li>□ □ □ □ □ recognize and write structures of isomers of alkanes, alkenes, alkynes and aromatic hydrocarbons;</li> <li>□ □ □ about various methods of preparation of hydrocarbons.</li> <li>□ □ □ □ □ distinguish between alkanes, alkenes, alkynes and aromatic hydrocarbons on the basis of physical and chemical properties;</li> <li>□ □ □ □ □ draw and differentiate between various conformations</li> </ul>	<b>Assignment, practice questions</b>

		<p>basis of physical and chemical properties;  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> draw and differentiate between various conformations of ethane;  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> appreciate the role of hydrocarbons as sources of energy and for other industrial applications;  <input type="checkbox"/> <input type="checkbox"/> predict the formation of the addition products of unsymmetrical alkenes and alkynes on the basis of electronic mechanism.  <input type="checkbox"/> <input type="checkbox"/> comprehend the structure of benzene, explain aromaticity and understand mechanism of electrophilic substitution reactions of benzene;  <input type="checkbox"/> <input type="checkbox"/> predict the directive influence of substituent's in monosubstituted benzene ring;  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> learn about carcinogenicity and toxicity</p>			<p>of ethane;  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> appreciate the role of hydrocarbons as sources of energy and for other industrial applications;  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> predict the formation of the addition products of unsymmetrical alkenes and alkynes on the basis of electronic mechanism.  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> comprehend the structure of benzene, explain aromaticity and understand mechanism of electrophilic substitution reactions of benzene;  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> predict the directive influence of substituent's in monosubstituted benzene ring;  10. student have developed concern for our future generation by appreciating judicious use of petroleum and natural gas and practicing in their own life. They also realized</p>	
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					the tragic side effects of excessive use of insecticides like DDT in world war ii and felt importance of cheaper alternate to it like BHC or gammexane.	
<b>05days</b>	<b>Hydrogen</b>	<p><b>After studying this unit students will be able to</b></p> <p>1. explain how different elements combine with hydrogen to form ionic, molecular and non stoichiometric Compounds.</p> <p>□ □ describe how an understanding of its properties can lead to the production of useful substances, and new technologies;</p> <p>3. □ understand the structure of water and use the knowledge for explaining physical and Chemical properties;</p> <p>□ □ explain how environmental water quality depends on a variety of dissolved substances; difference</p>	<p>Children will be able to:</p> <p>1. Analyse the properties of hydrogen relative to rest of the elements so as to enhance their analytical skills.</p> <p>2. Critical thinking will be developed when children will discuss the properties of hydrogen and reason of its abundance on earth only in combined state and not in Free State. This is how they will be able to create awareness about importance of gravity.</p> <p>3. The strange and absurd nature of hydrogen will make them understand about advantages and disadvantages of such qualities in life.</p> <p>4. Property of hydrogen as the lightest element shall make them appreciate and correlate the quality of being lighthearted with the reach to people.</p> <p>5. The behavior and properties of water will make them analyse and evaluate the qualities needed to become universally acceptable, adorable and useful.</p>	<b>Discussion on hydrogen economy</b>	<p>Students have learnt</p> <p>1. to explain how different elements combine with hydrogen to form ionic, molecular and non stoichiometric Compounds.</p> <p>□ □ □ □ describe how an understanding of its properties can lead to the production of useful substances, and new technologies;</p> <p>3. □ □ □ □ understand the structure of water and use the knowledge for explaining physical and Chemical properties;</p> <p>□ □ □ □ explain how environmental water quality depends on a variety of dissolved substances; difference between 'hard' and 'soft' water and learn about water softening;</p> <p>□ □ □ about heavy</p>	<b>Practice questions assignment</b>

		<p>between 'hard' and 'soft' water and learn about water softening;</p> <ul style="list-style-type: none"> <li>□ □ □ acquire the knowledge about heavy water and its importance.</li> <li>□ □ □ understand the structure of hydrogen peroxide, learn its preparatory methods and properties leading to the manufacture of useful chemical and cleaning of environment;</li> <li>□ □ □ understand and use certain terms e.g., electron-deficient, electron precise, electron-rich, hydrogen</li> </ul>			<p>water and its importance.</p> <ul style="list-style-type: none"> <li>□ □ □ the structure of hydrogen peroxide, learn its preparatory methods and properties leading to the manufacture of useful chemical and cleaning of environment;</li> <li>□ □ □ meaning of certain terms e.g., electron-deficient, electron precise, electron-rich, hydrogen</li> </ul> <p>8. student have developed various qualities required to enhance various life skill and values.</p>	
<b>07days</b>	<p><b>s-block/</b> general characteristics of the alkali metals and their compounds;</p> <ul style="list-style-type: none"> <li>□ manufacture, properties and uses of industrially important sodium and calcium compounds including Portland cement;</li> <li>□ biological significance of sodium,</li> </ul>	<p><b>S-BLOCK ELEMENTS</b>  <b>After studying this unit students will be able to</b></p> <p>1. describe the general characteristics of the alkali metals and their compounds;</p> <ul style="list-style-type: none"> <li>□ □ □ □ describe the manufacture, properties and uses of industrially important</li> </ul>		<b>Problem solving</b>	<p><b>students have learnt to</b></p> <ul style="list-style-type: none"> <li>□ □ appreciate the general trends in the chemistry of <i>p</i>-block elements.</li> <li>□ □ □ describe the trends in physical and chemical properties of group 13 and 14 elements.</li> <li>□ □ explain anomalous behavior of boron and carbon;</li> </ul>	<b>Practice questions assignment</b>

	potassium, magnesium and calcium.	sodium and calcium compounds including Portland cement; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> appreciate the biological significance of sodium, potassium, magnesium and calcium.			<input type="checkbox"/> <input type="checkbox"/> describe allotropic forms of carbon. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> chemistry of some important compounds of boron, carbon and silicon; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> list the important uses of group 13 and 14 elements and their compounds	
<b>January 14 days</b>	<b>P block/</b> general trends in the chemistry of <i>p</i> -block elements, trends in physical and chemical properties of group 13 and 14 elements, anomalous behavior of boron and carbon; allotropic forms of carbon, chemistry of some important compounds of boron, carbon and silicon, important uses of group 13 and 14 elements and their compounds.	<b>After studying this unit students will be able to</b> <input type="checkbox"/> <input type="checkbox"/> appreciate the general trends in the chemistry of <i>p</i> -block elements. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> describe the trends in physical and chemical properties of group 13 and 14 elements. <input type="checkbox"/> <input type="checkbox"/> explain anomalous behavior of boron and carbon; <input type="checkbox"/> <input type="checkbox"/> describe allotropic forms of carbon. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> know the chemistry of some important compounds of boron, carbon and silicon; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> list the important uses of group 13 and 14		<b>Problem solving</b>	<b>students have learnt to</b> <input type="checkbox"/> <input type="checkbox"/> appreciate the general trends in the chemistry of <i>p</i> -block elements. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> describe the trends in physical and chemical properties of group 13 and 14 elements. <input type="checkbox"/> <input type="checkbox"/> explain anomalous behavior of boron and carbon; <input type="checkbox"/> <input type="checkbox"/> describe allotropic forms of carbon. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> know the chemistry of some important compounds of boron, carbon and silicon; <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> list the important uses of group 13 and 14 elements and their compounds	<b>Practice questions assignment</b>

		elements and their compounds.				
<b>8days</b>	<b>States of matter/</b> existence of different states of matter in terms of balance between intermolecular forces and thermal energy of particles, laws governing behavior of ideal gases, gas laws in various real life situations, behavior of real gases. conditions required for liquefaction of gases, continuity in gaseous and liquid state, gaseous state and vapours.	<b>After studying this unit students will be able to</b> 1. explain the existence of different states of matter in terms of balance between intermolecular forces and thermal energy of particles. 2. explain the laws governing behavior of ideal gases; 3. explain the behavior of real gases. 4. describe the conditions required for liquefaction of gases; 5. differentiate between gaseous state and vapours.	<b>After studying this unit students will be able to</b> Appreciate and apply gas laws in real life situations and study of behaviour of ideal and real gases enable them to develop a feeling of remaining consistent in all types of circumstances.	<b>Numerical</b>	Students have learnt 1. to explain the existence of different states of matter in terms of balance between intermolecular forces and thermal energy of particles. 2. to explain the laws governing behavior of ideal gases; 3. apply gas laws in various real life situations; 4. to explain the behavior of real gases. 4. to describe the conditions required for liquefaction of gases; 5. students realize that there is continuity in gaseous and liquid state; 6. students have learnt to differentiate between gaseous state and vapours. 7. Students have developed understanding of the cause of altitude sickness and felt the necessity of oxygen	<b>Practice questions ,assignment</b>

					cylinder at high altitude. 8.They also developed life skills and values.	
<b>February</b>	<b>Revision</b>					