

YEAR PLAN 2018 -2019
Grade XII CHEMISTRY

The academic year is divided into three sessions.

Session One: June to August 2018.

Session Two: September 2018 to December 2018.

Session Three: January 2019 to March 2019

Term I – August 2018

Model I-December 2018

Model II – January 2019

Monthly Tests: June, July, October

Aim: Acquisition of knowledge and understanding of terms, concepts, facts, processes, techniques and principles relating to the subject of chemistry.

General Objectives: To develop the ability to apply the knowledge of contents and principles of chemistry in new and unfamiliar situations.

To develop skills in proper handling of apparatus and chemicals.

Enduring understanding:

To develop the ability to appreciate achievements in the field of chemistry and its role in nature and society.

Month	Topics	Specific Learning Objectives	Activities	Resources
June	Relative Molecular Mass and Mole	<ul style="list-style-type: none"> ❖ Describe Colligative properties of solutions and correlate these with molecular masses of solutes ❖ Explain abnormal colligative properties and abnormal molecular masses ❖ To calculate molecular weight, van't Hoff factor, degree of dissociation and association 	Written work Solve problems based on Colligative properties.	Nootan ISC Chemistry by Dr. H. C. Srivastava Chemistry-A text for class XII(NCERT)
	P-block elements (Group 15)	<ul style="list-style-type: none"> ❖ Appreciate the general characteristics of group 15 elements ❖ Study the preparation, properties and uses of nitrogen, oxides of nitrogen, ammonia and nitric acid ❖ Know the allotropes of phosphorus and their structures ❖ Study the compounds of phosphorus 	Seminars	ISC Chemistry XII NCERT Chemistry XII
	Haloalkanes and Haloarenes d- and f-block elements	<ul style="list-style-type: none"> ❖ Write the IUPAC and common names of haloalkanes and haloarenes ❖ Learn the chemistry of haloalkanes and haloarenes ❖ Correlate the variation of physical properties of these compounds with their structure ❖ Learn the chemistry of some polyhalogen compounds ❖ Understand the mechanism of some important reactions of the haloalkanes and haloarenes ❖ Learn the interconversion of related compounds ❖ Learn the definition and electronic configuration of transition and inner-transition elements ❖ Learn the classification and general properties of transition elements ❖ Understand lanthanide contraction and its consequences ❖ Understand the similarities and differences in the properties of lanthanides and actinides ❖ Preparation and properties of Potassium dichromate and potassium permanganate 	Written work Solve problems based on structures and reactions Written work Identification of the transition and inner transition elements from the periodic table	Nootan ISC Chemistry by Dr. H. C. Srivastava Nootan ISC Chemistry by Dr. H. C. Srivastava
July	States of Matter: Structure and Properties Chemistry of p-block elements (group 16)	<ul style="list-style-type: none"> ❖ Distinguish crystalline solids from amorphous solids ❖ Understand structure of solids and define unit cell, crystal lattice and Describe packing including efficiency of packing ❖ Classify crystals on the basis of binding forces ❖ Determine the imperfections in solids and their effects on the properties ❖ Describe the applications of solids in industries based on their electrical, magnetic and dielectric properties. ❖ Appreciate the general characteristics of group 16 elements ❖ Study the lab preparation of oxygen and the formation of oxide. ❖ Describe the manufacture and properties of Ozone. ❖ Explain the extraction of sulphur by Frasch process and the allotropes of sulphur. ❖ Describe the preparation, properties and uses of compounds: sulphur dioxide, sulphuric acid ❖ Understand the structure of oxoacids of sulphur 	Discussion, Diagrams Solving problems PowerPoint presentation Class work, Discussion Seminars Seminar Discussion Written work.	Chemistry by B.G.Segal Nootan ISC Chemistry by Dr. H.C. Srivastava Chemistry-A Text Book for Class XII (NCERT) Nootan ISC Chemistry by Dr.H.C.Srivastava.

July- August	Chemical Kinetics Practical Onam Holidays	<ul style="list-style-type: none"> ❖ Define the average and instantaneous rate of a reaction ❖ Describe the molecularity of the elementary reaction and order of simple and complex reactions ❖ State Law of Mass Action and to explain the effect of concentration of reactants on the rate of a reaction ❖ Express Rate Law ❖ Derive rate equation for first order reaction ❖ Derive rate equation for zero order reaction and its unit ❖ Define half- life period and derive the expression of half- life period for first order reactions ❖ Understand Collision Theory ❖ The concept of Activation energy and Threshold energy ❖ Formation of activated complex and the effect of catalyst on Activation Energy ❖ Effect of temperature on the rate constant of a reaction- Arrhenius equation ❖ Qualitative analysis of simple salt ❖ Identification of cations and anions ❖ Effect of concentration on the rate of a reaction 	Rate expression for different reactions Calculations Explanation using graphs and diagrams Written work.	Nootan ISC Chemistry by Dr. H.C.Srivastava. Chemistry-A Text Book for ClassXII (NCERT) Physical Chemistry by O.P.Tandom.
September	P-block elements (group 17)	<ul style="list-style-type: none"> ❖ General characteristics of group 17 elements ❖ Study the preparation, properties and uses of chlorine and hydrochloric acid ❖ Know the structure and acidic property of oxoacids of halogens ❖ Understand the structure, hybridization and shape of interhalogen compounds 	Seminar. Recall. Discussion	Nootan ISC Chemistry XII NCERT Chemistry XII
	Alcohols, Phenols and Ethers	<ul style="list-style-type: none"> ❖ Write the IUPAC and common names of alcohols, phenols and ethers ❖ Learn the chemistry of alcohols, phenols and ethers ❖ Correlate the variation of physical properties of these compounds with their structure ❖ Learn the tests to distinguish primary, secondary and tertiary alcohols ❖ Understand the mechanism of some important reactions of alcohols, phenols and ethers ❖ Learn the interconversion of related compounds 	Written work Solve problems based on structures and reactions	Nootan ISC Chemistry by Dr.H.C.Srivastava.
	Coordination Compounds	<ul style="list-style-type: none"> ❖ Learn the definition and basic concepts used in coordination chemistry ❖ Learn the nomenclature of coordination compounds ❖ Learn the different types of isomerism exhibited by coordination compounds ❖ Understand the nature of bonding in coordination compounds ❖ Understand the stability of coordination compounds ❖ Have an idea of the nature of coordination compounds and its applications 	Written work Present models of coordination compounds	Nootan ISC Chemistry by Dr.H.C.Srivastava.
	Biomolecules	<ul style="list-style-type: none"> ❖ Learn composition of cell and cellular components ❖ Understand carbohydrates, amino acids, peptides and peptide linkages ❖ Understand the structure of proteins ❖ Correlate the properties and functions of enzymes ❖ Understand the biological functions of DNA and vitamins 	Powerpoint presentation Discussion	Nootan ISC Chemistry by Dr.H.C.Srivastava.
	Metallurgy	<ul style="list-style-type: none"> ❖ Extraction of iron, aluminium, copper, zinc and silver 	Powerpoint presentation Practice to balance equations	Nootan ISC Chemistry by Dr.H.C.Srivastava
October	Electrochemistry Practical	<ul style="list-style-type: none"> ❖ State Faraday's laws of electrolysis ❖ Describe an electrochemical cell and the mechanism of current production in a galvanic cell ❖ Calculate the standard electrode potential and cell potential using Nernst equation ❖ Define resistivity, conductivity and equivalent conductivity and molar conductivity ❖ State Kohlrausch's law and describe its applications ❖ Explain the process of corrosion and the methods of prevention of corrosion ❖ Describe the construction of some primary and secondary cells ❖ Identification of organic compounds ❖ Electrochemistry 	Explanation with diagram. Written work. Calculation Discussion. Construction of a Galvanic cell Measurement of Cell potential.	Nootan ISC Chemistry by Dr. H. C. Srivastava Physical Chemistry by B.D, Khosla.

	Aldehydes, Ketones and Carboxylic acids	<ul style="list-style-type: none"> ❖ Learn the IUPAC and common names of aldehydes, ketones and carboxylic acids ❖ Learn the methods of preparation, physical and chemical properties of these compounds ❖ Correlate the variation in physical properties to the structure of these compounds ❖ Understand the mechanism of some important reactions of these compounds ❖ Correlate the strength of carboxylic acid with its structure 	Written work Solve problems based on structures and reactions	Nootan ISC Chemistry by Dr. H. C. Srivastava
	Organic Compounds Containing Nitrogen	<ul style="list-style-type: none"> ❖ Learn the common and IUPAC names of organic compounds containing nitrogen, including, nitrites, cyanides, isocyanides ❖ Learn the methods of preparation, physical and chemical properties of these compounds ❖ Distinguish different types of amines ❖ Able to discuss the importance of diazonium salts in organic synthesis ❖ Learn the interconversion of related compounds 	Written work Solve problems based on structures and reactions	Nootan ISC Chemistry by Dr. H. C. Srivastava
November	Surface Chemistry P-block elements (group 18) Polymers Chemistry in everyday life Practical	<ul style="list-style-type: none"> ❖ Distinguish between absorption and adsorption, physisorption and chemisorption ❖ Know the factors affecting adsorption of gases on solids ❖ Appreciate catalysis and Intermediate Compound Formation Theory ❖ Distinguish colloids from solutions and suspensions ❖ Classify colloids and to study the preparation and properties of colloids. ❖ Understand protective colloids, Gold number, Hardy-Schulze rule and emulsions ❖ Appreciate the applications of colloids in everyday life ❖ Explain the general characteristics of rare gases ❖ Understand the methods of preparation of xenon compounds ❖ Give the hybridization, shape and structure of xenon compounds ❖ Measurement of pH <ul style="list-style-type: none"> ❖ Learn the definition of polymers and related terms ❖ Understand the classification of polymers ❖ Correlate the strength of polymers to the intermolecular forces in them ❖ Understand the mechanism behind different types of polymerization ❖ Learn the synthesis, properties and applications of different types of polymers <ul style="list-style-type: none"> ❖ Realize importance of chemistry in everyday life ❖ Understand the basis of classification of drugs and terms like chemotherapy ❖ Understand some of the chemicals in food ❖ Understand the classification and functioning of soaps and detergents 	Discussion Written work. Guided learning Explanation Seminar Discussion. Written work.. Measurement of p^H of acidic and basic solutions. Seminars Discussion Powerpoint presentation Discussion	Nootan ISC Chemistry XII NCERT Chemistry XII Physical Chemistry-Bahl andTuli. Nootan ISC Chemistry XII Nootan ISC Chemistry XII
December	Revision, First Model Exam			
January	Second Model Exam			
February	Mock exam (Practicals) Board practical examination			
March	Board Examination			
<p>Text book :ISC Chemistry XII by Dr.H.C.Srivastava .</p> <p>Facilitator :Mrs.Prasanna Koshy.</p> <p>Approved by the Principal</p>				