## BISHOP SCOTT BOYS' SCHOOL

C = Qurriculum
D = Development &
L = Learning
D = Development







## BISHOP SCOTT BOYS' SCHOOL STUDENT CURRICULUM MANUAL

Subject: CHEMISTRY

Class: XII

Academic Plan: 2025 -26

Month	Course Description	Learning Objectives	Activity	<u>No. of</u> <u>Periods</u>	Portion for PT & TERM Assessment
Month	Course Description Chapter - 1: Solutions 1) Types of Solutions 2) Expressing Concentration of Solutions of Solutions. 3) Solubility 4) Solubility of a Solubility of a Gas in a Liquid 5) Solubility of a Gas in a Liquid 6) Vapour Pressure of Liquid Solutions. 7) Vapour Pressure of Liquid-Liquid Solutions. 8) Raoult's Law as a special case of Henry's Law 9) Vapour Pressure of Solutions of Solids in Liquids 10) Ideal and Nonideal Solutions	Learning Objectives          1) Gaseous Solutions, Liquid Solutions, Solid Solutions         2) Mass percentage (w/w), Volume percentage (V/V), Mass by volume percentage (w/V), Parts per million, Mole fraction, Molality:         3) Saturated, unsaturated solution         4) Henry's law, Raoult's law, Dalton's law of partial pressures,         5) Ideal Solutions, non-ideal solution         6) azeotropes         7) minimum boiling azeotrope and maximum boiling azeotrope.         8) Relative Lowering of Vapour Pressure, Elevation of Boiling Point, Depression of Freezing Point, Osmosis and Osmotic Pressure         9)Isotonic, hypotonic and hypertonic solution         10) Vants Hoff factor.	Activity Raw mango shrinks in salt solution.	No. of Periods	Portion for PT & TERM Assessment Chapter:1 Solutions Chapter :2 Electrochemistry
	11) Colligative Properties and Determination of				

<ul> <li>12) Reverse Osmosis and Water Purification</li> <li>13) Abnormal Molar Masses</li> </ul>				
Chapter - 2 :Electro chemistry.1)Electrochemical Cells2)electrolytic cell3)Galvanic Cells4)Measurement of Electrode Potential5)Nernst Equation6)Standard Electrode Potentials at 298 K7)Equilibrium Constant from Nernst Equation, Electrochemical Cell and Gibbs Energy of the Reaction	<ol> <li>Daniell cell or galvanic or voltaic</li> <li>Gibbs energy, electrode potential standard electrode potential emf)</li> <li>Standard Hydrogen Electrode</li> <li>Resistivity, resistance, conductance,</li> <li>Electrical conductance, ionic conductance</li> <li>conductivity cell</li> <li>molar conductivity, limiting molar conductivity</li> <li>Lm = L° m – A c ½</li> <li>Kohlrausch law of independent migration of ions.</li> <li>Applications of Kohlrausch law</li> <li>Faraday's Laws of Electrolysis</li> <li>Electrolysis of NaCl,H2SO4 and H2O.</li> <li>Primary Batteries, Secondary Batteries, Fuel Cells,</li> </ol>	1) <u>Variation of cell</u> <u>potential in</u> <u>Zn/Zn<sup>2+</sup>   Cu<sup>2+</sup>/Cu</u> <u>with change in</u> <u>concentration of</u> <u>electrolytes</u> (CuSO <sub>4</sub> or ZnSO <sub>4</sub> ) at <u>room temperature</u> .	20	R

Мау	<ul> <li>8) Conductance of Electrolytic Solutions, Measurement of the Conductivity of Ionic Solutions, Variation of Conductivity and Molar Conductivity with Concentration</li> <li>9) Electrolytic Cells and Cells and Cells and Electrolysis.</li> <li>10) Products of Electrolysis.</li> </ul>	8
	Batteries,	
	Chapter - 3:	1) average rate of a reaction, <b>a</b> ) Effect of <b>12</b>
	Chemical kinetics	2) instantaneous rate concentration and
	<b>1)</b> Rate of a Chemical	3) rate constant temperature on the
	Reaction.	4) elementary reactions, complex rate of reaction
	2) Factors	reactions between Sodium
	Influencing Kate	5) rate determining step Thiosulphate and
	or a Reaction 3) Dependence of	6) pseudo first order reactions The Automation of the Hydrochloric acid.
	Rate on	7) Arrhenius equation, frequency factor,
	Concentration	8) activation energy
	4) Rate Expression	9) most probable kinetic energy. Gibbs
	and Rate Constant	energy, effective collisions
	5) Order of a	

	Reaction				
	6) Molecularity of a				
	Reaction				
	Chapter - 3:			12	
June					
	7) 3 Integrated Rate			/	
	Equations.				
	8) Zero Order				
	Reactions. First				
	Order Reactions				
	9) Half-Life of a				
	Reaction				
	10) Temperature				
	Dependence of the				
	Rate of a Reaction				
	11) Effect of Catalyst				
	12) Collision Theory of				
	chemical re <mark>action</mark>				
N. A. a. a. b. la	Course Description			No. of	Portion for PT & TERM
wonth	Course Description	Learning Outcome	Activity	Periods	Assessment
	(C)				(R)
	<u>Chapter -</u> : 4	1) electronic configuration	1) Determination of	18	
	: d and f Block Elements	2) occurrence and characteristics of	concentration/molarity of		
July	1)General introduction,	transition metals	KMnO4 solution by		
	2) general trends in	3) properties of the first-row transition	titrating it against a		
	3) metals – metallic	4) , ionization enthalpy, oxidation	standard solution of		
	cnaracter	states, ionic radii, colour, catalytic			
	4)alloy formation,	property, magnetic properties,	2) Preparation of		
	5) preparation and	interstitial compounds	Potassium Ferric Oxalate.		
	KMpO4	5) Electronic configuration, oxidation			
	KWINU4.	states, chemical reactivity and			

5) Lanthanides	lanthanide contraction and its			
6) Actinides	consequences.			
	6) Electronic configuration, oxidation			
	states and comparison with			
	lanthanid <mark>e</mark> s			
		Qualitative analysis Determination of one anion and one cation in a given salt Cations: Pb2+,Cu2+, Al3+, Fe3+,Mn2+, Ni2+ Zn2+ Co2+ Ca2+Sr2+ Ba2+ Mg2+, NH4 + Anions: CO3 2-,S 2-, SO3 2-, NO3 -, NO2 -, Cl-, Br-, I -,SO4 2-, PO4 3-, CH3COO-, C2O4 2- (Note: Insoluble salts excluded		
Chapter - 5:	1)ligands	1) Preparation of double	12	
Coordination Compounds	2) coordination number colour magnetic	salt of Ferrous Ammonium		(R)
1)Coordination	properties and shapes	Sulphate or Potash Alum.		
2) Introduction	3) IUPAC nomenclature of mononuclear			
3) Werner's theory, VBT,	coordination compounds			
and CFT	•			
	4). Bonding.			
	5)structure and stereoisomerism,			
	6) importance of coordination compounds (in			
	qualitative analysis, extraction of metals and			

		biological system).			
	<u>Chapter - 6</u> :	1)Nomenclature	Preparation of any one of		Portion for TERM – 01
	Haloalkanes and	2) nature of C–X bond	the following compounds	22	1) Solutions
	1) Haloalkanos	3)physical and chemical properties	i) Acotanilida ii) Di-	22	2) Electrochemistry
	1) Haloaronos	4) optical rotation mechanism of substitution	henzalAcetone iii) p-		<ul> <li>2) Electrochemistry</li> <li>3) Chemical kinetics</li> </ul>
	2) Haloarenes	reactions.	Nitroacetanilide iv) Aniline		4) d and f block elements
August	environmental		Yellow or 2-Naphthol		i) a and i block cicilicitis
	effects of -		Aniline Dve		
	dichloromethane		<u>runnice byen</u>		
	trichloromethane				
	tetrachloromethan				
	e. jodoform.				
	freons, DDT				
	Chapter-7	1) alcohol Nomenclature	Tests for the functional	20	
		2)methods of preparation	groups present in organic		
	1)Alcohols	3)physical and chemical properties (of	compounds		
	2) Phenols and	primary alcohols only),			
		4) identification of primary, secondary	Alcohol and phenol		
	3) Ethers	and tertiary alcohols,	Contraction of the second s		
		5) mechanism of dehydration,			
		6) uses with special reference to			
		methanol and ethanol.			
		7) Phenols: Nomenclature, methods of			
		preparation, physical and chemical			
		properties, acidic nature of phenol,			

		electrophilic substitution reactions, uses of phenols. 8) Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses			
<u>Septemb</u> <u>er</u>	<u>Chapter - 8</u> : Aldehydes, Ketones and Carboxylic Acids 1) Introductions	<ol> <li>Aldehydes and Ketones:</li> <li>Nomenclature</li> <li>nature of carbonyl group,</li> <li>methods of preparation,</li> <li>physical and chemical properties,</li> <li>mechanism of nucleophilic addition,</li> <li>reactivity of alpha hydrogen in aldehydes,</li> </ol>	<ul> <li>i) <u>Acetanilide ii) Di-</u> <u>benzalAcetone iii) p-</u> <u>Nitroacetanilide iv) An</u> <u>iline Yellow or 2-</u> <u>Naphthol Aniline Dye.</u></li> <li>ii) Tests for the functional groups present in organic compounds <u>aldehydic,</u> <u>ketonic, carboxylic</u></li> </ul>	15	
		8) Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.	SCO		
	Chapter - 9:	1) Amines:	Test of amino (Primary)	14	Portion for PT – 02
	<u>1)Amines</u> 2) Diazonium salts	2) Nomenclature. 3) classification, structure.	groups.		<ol> <li>Solutions</li> <li>Electrochemistry</li> <li>Chemical kinetics</li> </ol>
October		<ul> <li>4) methods of preparation, physical and chemical properties,</li> <li>5) uses, identification of primary, secondary and tertiary amines</li> </ul>			<ol> <li>d and f block elements</li> <li>coordination compound</li> <li>Haloalkanes and Haloarenes</li> <li>Alcohol phenol and ether</li> </ol>

		6) Diazonium salts Preparation, chemical reactions and importance in synthetic organic chemistry.			<ol> <li>8) Aldehydes, Ketones and Carboxylic Acids</li> <li>9) Amines</li> <li>10) Biomolecules</li> </ol>
	<u>Chapter - 10</u> :	1)Classification (aldoses and ketoses),			
November	<u>Biomolecules</u>	monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch,	1//	17	
	1) Carbohydrates 2) Proteins	cellulose, glycogen); Importance of carbohydrates.			
	3) Vitamins	2) Proteins -Elementary idea of - amino acids.			
	4) Nucleic Acids	peptide bond, polypeptides, proteins,			
		structure of proteins - primary, secondary,			
		tertiary structure and quaternary structures			
		(qualitative id <mark>ea o</mark> nly), denaturation of			
		proteins; enz <mark>ymes</mark> . Hormones - Elementary			
		idea excluding structure.			
		3) Vitamins - Classification and functions.	Ra		
		4) Nucleic Acids: DNA and RNA.	NUDA		
December	C	BL			R