Торіс	STANDARD VI	STANDARD VII	STANDARD VIII	STANDARD IX	STANDA RD X
10. Atomic physics					Atomic physics
					Radioactivity
					Properties of alpha, Beta, gamma Rays.
					Nuclear fission
					Chain reactions
					Nuclear Fusion
					Uses of Radio Activit
					safety measures
					Nuclear Reactor [out line]

State Council of Educational Research and Training, Chennai-6 Draft syllabus – Final

Торіс	STANDARD VI	STANDARD VII	STANDARD VIII	STANDARD IX	STANDARD X
1.Matter	Matter	<u>Matter</u>	Matter	Matter	Solution
1.Matter around us	Matter         1.1 Classification of matter         1.2 Solids, liquids, gases Introduction         1.3 Pure substances and mixed substances Need for Separation         1.6 Definition of Separation         1.7 Separation of substances         1.7.1 Hand picking         1.7.2 Winnowing         1.7.3 Sieving         1.7.4 Magnetic Separati on	Matter 1.1 Separation of substances - Evaporation - Condensation - Crystallization. 1.2 Effect of temperature on - solid, liquid and gases 1.3 Occurrence of Elements and Compounds in nature 1.4 Elements in	Matter 1.1 Compounds in solid state 1.2 Compounds in liquid state 1.3 Compounds in gaseous state 1.4 Uses of compounds in day to daylife 1.5 Metals and non- metals 1.6 Symbols of elements 1.7 Formula of common compounds 1.8 (5 examples)	Matter         1.1.       Classification of matter characteristics of matter differences between mixture and compound         1.2.       Types of mixtures         1.3.       Homogenous mixture and heterogeneous         1.4.       Sublimation         1.5.       Types of distillation	Solution 1.1. Solution - Solvent and Solute - Types of Solution - Aqueous and Non - aqueous solution- Saturated and unsaturated solution - Diluted and Concentration solution 1.2. Factors affecting Solubility, Solubility, Solubilityof Compounds - Tables 1.3 % of Composition
	1.7.5 Sedimentation 1.7.6 Decantation 1.7.7 Filtration	<ul> <li>1.4 Elements in human body</li> <li>1.5 Elements in air</li> <li>1.6 Molecules of Elements andCompounds</li> <li>1.7 Symbols of some common elements</li> <li>1.8 Atomicity of elements</li> </ul>	1.9 Valency	distillation 1.6Definition of absorption and adsorption 1.7. types of chromatography 1.8. Centrifugation	1.3. % of Composition

#### CLASS VI to X – Chemistry

Торіс	STANDARD VI	STANDARD VII		STANDARD VIII		STANDARD IX	STANDARD X
					1.9.	solvent extraction	1.4. Mass Percentage
					1.10.	Solution <b>&amp;</b> Colloids	1.5. Volume Percentage
					1.11. 1.12.	Solute and solvent -types of solution - colloids, true solution and suspension - types of colloids -tyndal effect Brownian movement – applications. Emulsion and its types	<ul> <li>1.6 Hydrated Salts (eg.)CuSO<sub>4</sub>.5H<sub>2</sub>0, MgSO<sub>4</sub>, 5H<sub>2</sub>04</li> <li>1.7 Deliquescence salts</li> <li>1.8 Problems based on Solubility products and percentage</li> </ul>
2. Changes	Changes around us	Changes around us	Chan	ges around us			
around us	<ul> <li>2.1 What is change ?</li> <li>2.2 Change of state</li> <li>2.3 Classification of changes</li> <li>2.3.1 slow and fast</li> <li>2.3.2 reversible and irreversible</li> <li>2.3.3 desirable and undesirable</li> <li>2.3.4 natural and man made</li> <li>2.4 solute, solvent, solution</li> </ul>	<ul> <li>2.1. Physical change</li> <li>2.1.1. Crystallization</li> <li>2.1.2. Melting</li> <li>2.1.3. Evaporation</li> <li>2.1.4. Freezing</li> <li>2.1.5. Sublimation</li> <li>2.1.6. Chemical change</li> <li>2.1.7. Rusting of iron</li> <li>2.1.8. Burning</li> <li>2.2. Curdling</li> <li>2.3. Chemical reaction of Baking Soda</li> <li>2.4. with lemon juice</li> <li>2.5. Conditions neededfor a chemicalchange</li> <li>2.6. Indicators of a chemical change</li> <li>2.7. Periodic and nonperiodic change</li> <li>2.8. Endothermic and Exothermic</li> </ul>	2.1. 2.2. 2.3. 2.4. 2.5. 2.6. 2.7. 2.8. 2.9.	Chemical reactionsbased on contact solution of reactants, Electricity heat, light, catalyst Effects of chemical reactions heat, light, sound and pressure			

Торіс	STANDARD VI	STANDARD VII	STANDARD VIII	STANDARD IX	STANDARD X
3. Air	Air3.1.Atmosphere3.2.Composition of air3.3.Importance of airforsurvivalofplantsandanimalsanimals3.4.Burning andcombustion3.5.Jses of air3.6.Experimntalverification ofN2,CO2and O2in Air		Air3.1.Oxygen, Carbondioxide and Nitrogen3.1.1.Occurrence3.1.2.Physical and chemical properties3.2.Nitrogen fixation3.3.Global warming3.4.Acid rain		
4. Water	<ul> <li>Water</li> <li>4.1. Availability of water</li> <li>4.2. Sources of water</li> <li>4.3. Composition of water</li> <li>4.4. Importance of water</li> <li>4.5. Three states of water and inter conversions</li> <li>4.6. Water vapour</li> <li>4.7. water cycle</li> </ul>		Water4.1.Water4.1.1.Composition4.1.2.Determination4.1.3.Preparation4.1.4.andProperties4.2.Universal solvent4.3.Potable water4.3.Water pollution4.5.Common pollutants4.6.Controlling water pollution4.7.Water treatment methods4.8.Hardness of water removal of pardness		
5. Atomic Structure		<ol> <li>Atomic Structure</li> <li>Structure of an atom</li> <li>Sub-atomic particles and its properties</li> <li>molecules, compounds mixture and its types</li> <li>symbols</li> </ol>	Atomic Structure5.1.Laws of chemical combination5.2.Various views of Atomic structure5.2.1.John Dalton5.2.2.J.J.Thomson5.3.Cathode ray experiment5.4.Limitation of Thomsonmodel5.5.Valence5.6.Writing Molecular formula (Criss- cross method)5.7.Ions	<ol> <li>Atomic Structure</li> <li>Discovery of nucleus Rutherford model of an atom         <ul> <li>experiment, bservation, conclusion and limitations.</li> </ul> </li> <li>Bohr's model of an atom</li> <li>Postulates and limitations</li> <li>4 Characteristics fundamental particles</li> <li>Composition of nucleus</li> <li>5 Atomic number &amp;</li> </ol>	<ol> <li>Modernatomic theory</li> <li>Avogadro hypothesis and uses</li> <li>-Vapor Density</li> <li>-Relation between Vapordensity and molecular mass</li> <li>-Atoms and molecule Difference</li> <li>S-Relative Atomic mass and molecular mass</li> <li>-Relative Atomic mass and molecular mass</li> </ol>

130

Торіс	STANDARD VI	STANDARD VII	STANDARD VIII	STANDARD IX	STANDARD X
			<ul> <li>5.8. Types of ions</li> <li>5.9. Different valent ions</li> <li>5.10. Information conveyed by Molecular Formula</li> <li>5.11. Reactants, products and balancing simple equations</li> <li>5.12. Simple problems</li> </ul>	Mass Number 5.6 Isotopes, isobar, isotones, - Electronic configuration of atoms, valence electrons and valence laws of chemical combination, volumes (Gay lussec's) 5.7 Introduction of Quantum Numbers	problems 5.7 -Average atomic mass 5.8 Electronic Configuration: <i>s</i> , <i>p</i> , <i>d</i> , <i>f</i> Blocks 5.9 characteristics of <i>δ</i> block and <i>φ</i> block elements
6. Acids, Bases and Salts			<ul> <li>Acids and Bases</li> <li>6.1. Definition of acids and bases</li> <li>6.2. Properties of Acids &amp; Bases</li> <li>6.3. Uses of Acids and Bases in daily life</li> <li>6.4. Neutralization Reaction (definition only)</li> <li>6.5. Natural indicators</li> </ul>	Acids, Bases and Salts 6.1Types 6.2. Identification 6.3. Properties 6.4. uses 6.5. Aquaregia	
7. Wastesand its Management		Wastes and itsManagement7.1.Synthetic fibers7.1.1.Types and uses7.2.Polymers7.3.Plastics7.3.1.Types and uses7.3.2.Hazardness of Plastics7.4.PLA Plastics7.5.Various methods of disposing Plastics7.6.Biodegradable plastics7.7.Plastic eating Bacteria7.8.Glass7.9.Types and use			

131

Торіс	STANDARD	STANDARD	STANDARD	STANDARD	STANDARD
	VI	VII	VIII	IX	X
8. Chemistry	Chemistry in Everyday	Chemistry in	Chemistry in Everyday	Carbon and its	Carbon and its
in Everyday	life	Everydaylife	life	compounds	compounds
life	<ul> <li>8.1. Fertilizers</li> <li>8.2. Cements</li> <li>8.3. Gypsum / Epsum</li> <li>8.4. Plaster of Paris</li> <li>8.5. Soaps and Detergents</li> <li>8.6. Phenol</li> <li>8.7 Adhesives</li> </ul>	<ul> <li>8.1. Medicines</li> <li>8.1.1. Antibiotics</li> <li>8.1.2. Analgesics</li> <li>8.1.3. Antipyretic</li> <li>8.1.4. Antiseptics</li> <li>8.1.5. Antihistamine</li> <li>8.1.6. Antacids / ORS</li> <li>8.2. Combustion and its types</li> <li>8.3. Flame and its structure</li> <li>8.4. Fire control</li> <li>8.5. Fire extinguishers</li> </ul>	<ul> <li>8.1. Hydrocarbons</li> <li>8.2. Natural gas</li> <li>8.3. Producer gas</li> <li>8.4. Coal gas</li> <li>8.5. Water gas</li> <li>8.6. Bio gas</li> <li>8.7. Coal and its types</li> <li>8.8. Petroleum</li> <li>8.9. Refining of petroleum</li> <li>8.10. Characteristics of ideal fuel</li> <li>8.11. Specific energy/Calorific value</li> <li>8.12. Octane number</li> <li>8.13. Cetane number</li> <li>8.14. Solar energy as a non-depleting fuel</li> <li>8.15. applications of solar energy</li> </ul>	<ul> <li>8.1. Introduction of carbon</li> <li>8.2. Special features of carbon</li> <li>8.3. Catenation</li> <li>8.4. Multiple bond</li> <li>8.5. Isomerism</li> <li>8.6. Allotropy</li> <li>8.7. Valency</li> <li>8.8. Physical and Chemical properties of carbon</li> </ul>	8.1.Characteristic s of organic compounds8.2.Classification of organic Compounds8.3.Homologous series8.4.Nomenclature rulesfor8.5.writing IUPAC name8.6.Hydrocarbon8.6.1Alkanes : CnH2n+28.6.2.Alkenes : CnH2n8.6.3.AlvoreCnH2n-28.6.4.Alkenes : CnH2n8.7.5Alkenes : CnH2n8.7.6Nompounds8.7.7Carbonyl Compounds 

Торіс	STANDARD VI	STANDARD VII	STANDARD VIII	STANDARD IX	STANDARD X
9.Chemical Reaction				Chemical bonding         9.1. Bond - Definition         9.1.1. Types of Bond         9.1.2. Octet rule         9.1.3. Lewis rule         9.1.4. Kossell rule         9.2. Formation of Ionic Bond         9.2.1. NaCl, MgCl <sub>2</sub> , CO <sub>2</sub> 9.3. Formation of covalent bond         9.3.1. Fajan's rule         9.3.2-H <sub>2</sub> ,O <sub>2</sub> ,N <sub>2</sub> ,F <sub>2</sub> ,Cl <sub>2</sub> ,CH <sub>4</sub> 9.4. Differences between Ionic and Covalent bonds         9.5. Characteristics of Ionic and covalent bonds         9.6 Formation of coordinate bond         9.6.1 Lewis concept         9.6.2 NH <sub>3</sub> - BF <sub>3</sub> 9.7 Oxidation, Reduction and Redox reaction,         9.8 Oxidation number         9.9 Problems on Determination of Oxidation number	Types of Chemical Reaction         9.1. Combination – decomposition, double displacement Precipitation- neutralization- Reversible – Irreversible         9.2 Equilibrium state         9.3Factors influencing -         9.4. pH Scale : pH Paper         9.5. Role of pH in Ever daylife         9.6. pH-Calculation -         9.7. problems         9.8. Ionic product of water
10. Periodic classificatio n of elements				Periodic classification of elements         10.1. Early concepts         10.1.1. Doberinar's Triads         10.1.2. New land law of octave         10.1.3. Mendeleev's octave table         10.1.4. Modern periodic table         10.2. Postulate , advantages and limitations	Periodic classification of <u>elements</u> 10.1. Modern periodic law 10.2. Period table characteristics of group and periods 10.3. Periodic trend in properties - Atomic radius lonic radius lonic radii ionization energy, electron affinity and electro negativity

Торіс	STANDARD VI	STANDARD VII	STANDARD VIII	STANDARD IX	STANDARD X
				<ul> <li>10.3 Classification - Metals non metals and metalloids</li> <li>10.4 Alloys and uses classification based on modern table <i>s</i> ,<i>p</i>, <i>d</i>, <i>f</i> and rare gases,</li> <li>10.1.5. Position of hydrogen in periodic table</li> </ul>	<ul> <li>10.4. Metallurgy</li> <li>10.4.1. Introduction</li> <li>10.4.2. terminology</li> <li>10.4.3. Difference between ores and minerals</li> <li>10.4.4. types of separation</li> <li>10.4.5. Occurrence of minerals in Tamilnadu</li> <li>10.4.6. properties of metal</li> <li>10.4.7. Metallurgical process</li> <li>10.4.8. Metallurgy of Al,Cu and Fe,</li> <li>10.4.9. Alloys - types and use</li> <li>10.4.10. Amalgam</li> <li>10.4.11 Corrosion</li> <li>10.4.5 method preventing corrosion</li> <li>10.6 (Pamban bridge painting)</li> </ul>
11. Applied Chemistry				<ul> <li>11.1.Introduction of applied chemistry</li> <li>11.2.Nano chemistry</li> <li>11.3.Pharmaceutical chemistry</li> <li>11.4.Electro chemistry</li> <li>11.5.Radio Chemistry</li> <li>11.5.Radio Chemistry</li> <li>11.6.Dye chemistry</li> <li>11.7.Agricultural chemistry/Food Chemistry</li> <li>11.8.Forensic chemistry</li> <li>11.8.Forensic chemistry</li> <li>11.9. Definition,future application, Day today life, uses of Applied chemistry</li> </ul>	

134

#### State Council of Educational Research and Training, Chennai-6 Draft syllabus – Final

#### CLASS VI to X – Biology

Торіс	STANDARD VI	STANDARD VII	STANDARD VIII	STANDARD IX	STANDARD X
1.Living world of Plants	<ul> <li>1.2. The habitat of the living plants</li> <li>1.2.1 Habitat - Types aquatic, Terrestrial, deserts, mountains</li> <li>1.2.2. Plants adaptation and modifications of plants - tendrils, Climbers, thorns</li> <li>1.3. Plants – form and function</li> <li>1.3.1. Morphological structure and function of root, stem and leaves</li> </ul>	<ul> <li>1.1. Characteristics of living things</li> <li>1.2. Habitat – Aquatic and Terrestrial plants</li> <li>1.3. Herbs, shrubs and trees</li> <li>1.4. Parts of plants - Root, stem, leaves and flowers Reproduction in plants, Pollination, Types of Pollination, Pollinators, Fertilization</li> <li>1.5. Modification of roots, stems, leaves</li> <li>1.6. Kinds of stems</li> </ul>	Plant Kingdom1.1.Binomial nomenclature1.2.Bentham and Hooker. system of Classification1.3.Algae1.4.Fungi1.5.Bryophytes1.6.Pteridophytes1.7.Gymnosperms1.8Angiosperms1.9Monocotyledons1.10Dicotyledons1.11Medicinal plants	Movements in plants Introduction Types of movements in plants with Experiments 1.1. Tropic movements 1.2. Phototropism 1.3. Geotropism 1.4. Hydrotropism 1.5. Nastic movements – types thigmonasty, photonasty, thermonasty. Photosynthesis in plants Transpiration in Plants	Plant Anatomy         Introduction Structure         of root(T.S) Structure         of stem(T.S)         Structure of leaf.         (T.S) Plant         Physiology         Structure and         function of         chloroplast and         mitochondria         1.       Photosynthesis         2.       Respiration         3.       Transpiration
2. Living World of Animals	<ol> <li>Bio Diversity</li> <li>2.1 Unicellular and multi cellular organisms</li> <li>2.1. Variations between body and shape e.g. Fish, lizard and birds</li> </ol>	Basis of Classification 2.1. Need for classification 2.2. The 5 kingdom classification Binomial Nomenclature (Introduction)	<ul> <li>Micro Organisms</li> <li>2.1 Virus, bacteria, algae, fungi and protozoa.</li> <li>2.2 Uses of roorganisms in medicine, agriculture, industry and daily life</li> <li>2.3 Harmful microorganisms</li> <li>2.4 Microbes in food process.</li> </ul>	Diversity in living organism Animalia Invertebrata - Protozoa - Porifera - Coelenterata - Platyhelminthes - Nematoda - Annelida - Arthropoda - Mollusca - Echinodermat - Prochordata	Type study- Invertebrata, Vertebrata