

**AS PER CCE GUIDELINES
SCIENCE COURSE STRUCTURE
CLASS X
(2010-2011)**

FIRST SEMESTER	MARKS – 80
UNITS	MARKS
I. Chemical Substances Chemical reaction; Acids, Bases and Salts, Metals and Non Metals	29
II. World of living Life process; Control and Coordination in animals and plants	19
III. Effects of current Electricity, Magnetic effects of currents	26
IV. Natural Resources Sources of Energy	06
TOTAL	80

SECOND SEMESTER	MARKS – 80
UNITS	MARKS
I. Chemical Substances Chemical Compounds; Periodic classification of elements	21
II. World of living Reproduction; Heredity and Evolution	27
III. Natural Phenomena Light reflection and Refraction Human eye	26
IV. Natural Resources Our Environment, Management of natural resources.	06
TOTAL	80

SYLLABUS – CLASS X
FIRST SEMESTAR 2010-11
(April' 10 – September' 10)

Month	Dates	Working Days	Chapter / topic	Practical / Activity
April	01.04.10 To 03.04.10	2	Chapter 1 Chemical Reactions and Equations - Writing and Chemical Equations	Activity Burning of Mg Ribbon
	05.04.10 To 09.04.10	5	Balancing of chemical Equations. Types of chemical reactions	Practical 1 i. Formation of slaked lime by the reaction of CaO with water. ii. Reaction of CuSO ₄ solution with Fe nails dipped in it. iii. To observe Rusting of Iron.
	12.04.10 To 17.04.10	6	Oxidation and Reduction. Redox Reactions Corrosion and Rancidity. Text Questions of chapter 1.	i. Heating the crystals of FeSO ₄ , CuSO ₄ and Pb (NO ₃) ₂ ii. Reaction between sodium sulphate solution and barium chloride solution. iii. Oxidation of Cu to CuO iv. To observe the changes in colour, odor etc in cut fruits and vegetables Related Multiple choice questions.
April	19.04.10 To 24.04.10	6	Chapter 2 Acids, Bases and salts Common and Chemical properties of Acids & Bases Reaction with metals, Metal Carbonates and bicarbonates, metallic oxides, non metallic oxides.	Activities i. Identification of Acids & bases using different indicators. ii. Passing CO ₂ through Slaked lime. iii. Reaction of metal carbonates and

			Reaction between aqueous Solutions of Acids and Bases, strength of Acids & Bases.	bicarbonates with acids.
April / May	26.04.10 To 01.05.10	6	<p>What is pH? Concept of pH scale, Importance of pH in everyday life</p> <p>Preparation and uses of sodium Hydroxide, Bleaching Powder, baking soda, Washing soda & Plaster of Paris.</p> <p>Text Questions</p>	<p>Practical 2</p> <p>To study the properties of Acids & Bases (HCl & NaOH) and their reactions with</p> <ol style="list-style-type: none"> Litmus Zn metal Na₂CO₃ <p>Practical 3</p> <p>(b) To find pH of the following sample by using ph paper – dil HCl, NaOH, Ethanoic acid, lemon juice, water, NaHCO₃</p>
May	03.05.10 To 07.05.10	5	<p>Chapter 14 Sources of Energy</p> <p>Different forms of energy. Conventional and Non Conventional source of energy. Fossil fuels – Coal & Petroleum Renewable Sources – Solar Energy, Bio gas, wind energy, water and tidal energy. Nuclear energy. Renewable and Non renewable sources.</p>	<p>Activities</p> <ul style="list-style-type: none"> - To list different forms of energy used by us and their sources. - To prepare a model of Solar Heater / Cooker. - To learn about different types of power plants. - To prepare a project on any of the following. <ol style="list-style-type: none"> Renewable and Non renewable sources of energy. Global warming & Climate Changes – factors and solutions. <p>MCQ (IX)-Exp.1</p> <p>To prepare true solution, Suspension and colloids and distinguish on the basis of transparency, filtration and stability.</p>

				<p align="center">MCQ(IX) Exp.2</p> <p>To prepare a mixture and compound using Iron filings and Sulphur Powder and distinguish between their properties.</p>
May / June	10.05.10 To 25.06.10		SUMMER VACATION	<p align="center">Projects</p> <p>i. Rain water Harvesting – methods and Importance.</p> <p>ii. To study the biodiversity of a given area (e.g. Lodhi garden, Asola wild life Sanctuary, Aravalis).</p> <p>iii. To record Max and min temp for a month and derive conclusions</p>
June / July	26.06.10, 28.06.10 To 03.07.10	1+6 = 7	<p>Chapter 3 Metals and Non Metals</p> <ul style="list-style-type: none"> - Physical properties of metals & non metals. - Chemicals properties of metals and non metals. <p>i. Reaction with Oxygen (air)</p> <p>ii. Reaction with water</p> <p>iii. Reaction with Acids</p> <p>iv. Reaction with other metal salt solutions</p>	<p align="center">Activities</p> <p>i. To observe physical properties of metals such as Fe, Zn and Cu and non Metals such as Graphite (c), Sulphur and Iodine.</p> <p>ii. To test for the conductivity of Metals.</p> <p>iii. To study the chemical reactions of metals with Oxygen, water, acids and solutions of other Metal Salts.</p> <p align="center">MCQ(IX)Exp.3</p> <p>To carry out different chemical reactions and classify them into different types</p>
July	05.07.10 To 09.07.10	5	<p>Reactivity series of Metals Formation and properties of Ionic compounds. Basic metallurgical processes.</p> <p>Extraction of metals belonging to less active, moderately active and highly active metals Corrosion and Prevention</p>	<p align="center">Practical 4</p> <p>To observe the action of Zn, fe, Cu, Al, on Zinc sulphate, Ferrous sulphate, copper sulphate and Aluminium Sulphate.</p> <p>To arrange Zn, Fe, Cu and Al metals in the</p>

			Text Questions	decreasing order of reactivity based on the above result.
July	12.07.10 To 17.07.10	6	<p>Chapter 6 Life Processes</p> <p>Living Beings. What are life processes?</p> <p>Nutrition - Autotrophic and Heterotrophic Nutrition Nutrition in Amoeba & human Beings Respiration – Aerobic and Anaerobic respiration. Human Respiratory system</p>	<p>Activity To Test the presence of CO₂ in exhaled air</p> <p>Practical 5 To show that CO₂ is released during respiration.</p> <p>Practical 6 To prepare a temporary mount of leaf stomata.</p> <p>Practical 7 To show that light is necessary for photosynthesis</p>
July	19.07.10 To 24.07.10	6	<p>Transportation in Human Being Structure and function of heart Blood vessels and cells. Blood Pressure Transportation in plants Excretion in Human Beings and plants Structure of excretory system in Human Beings Structure and function of nephron.</p>	<p>Activities To observe transpiration in plants</p> <p>To prepare charts / models depicting any of the life processes using waste material. (In no case, thermocol is to be used) Any other related project.</p> <p>MCQ(IX)Exp.4 To verify the laws of reflection of sound.</p>
July	26.07.10 To 31.07.10	6	<p>Chapter 7 Control and Coordination</p> <p>Nervous system in Animals Structure and function of neuron. Voluntary and Involuntary actions. Reflex arc and reflex action. Human Brain – different parts and their</p>	<p>Activities</p> <p>i. To observe reflex action in one's body. ii. To observe the functioning of taste buds. iii. To study tropism in plants</p> <p>MCQ(IX) Exp. 5</p>

			<p>function. Co-ordination in plants – response to stimulus. Hormones in Plants and Animals Functions of different hormones. Endocrines glands in Human beings (male & female)</p> <p>Text Questions</p>	<p>To determine the density of solid using spring balance and a measuring cylinder.</p>
Aug	02.08.10 To 07.08.10	6	<p>Chapter 12 Electricity Electric current, potential difference, electric circuit, Ohms Law, Resistance, resistivity, factors on which resistance of a conductor depends.</p> <p>Series and parallel combinations of resistors and their application in daily life.</p>	<p>Practical 8 To study the dependence of potential difference (V) across a resistor on the current (I) passing through it and determine its resistance. Also plot a graph between V and I</p> <p>Practical 9 To determine the equivalent resistance of two resistors when connected in series</p> <p>Practical 10 To determine the equivalent resistance of two resistors when connected in parallel</p>
Aug	09.08.10 To 13.08.10	5	<p>Heating effects of electric current and its application in daily life. Electric power Inter Relation between P, V, I, and R.</p> <p>Text Questions</p>	<p>Activities To prepare a simple circuit. To study the symbols of different components of a circuit.</p> <p>MCQ(IX)Exp.6 To establish the relation between the loss in weight of a solid when fully immersed in Tap Water and Salty Water.</p>

Aug	16.08.10 To 21.08.10	6	Chapter 13 Magnetic effects of electric current Magnetic field, field lines, field due to a current carrying conductor Right hand thumb rule Field due to current carrying coil / solenoid.	MCQ(IX)Exp.7 To measure the temperature of hot water as it cools and plot a temperature- time graph
Aug	23.08.10 To 28.08.10	6	Force on a current carrying conductor in a magnetic field. Fleming's Left Hand Rule. Electric motor. Electromagnetic Induction. Fleming's Right Hand Rule. Electric Generator Domestic electric circuit. Text Questions.	Activities - To study the function of a galvanometer - To prepare a project on life and work of any physicist such as physicist. (i) Michael Faraday George Simon Ohm, Fleming etc.
	30.08.10 To 04.09.10		Revision	MCQ (IX)Exp.8 To determine the velocity of a pulse propagated through a stretched slinky.
	06.09.10 To 11.09.10		Revision	
			08.09.10	First CCEP
	13.09.10 To 30.09.10		Revision & First Semester Exams	
	1.10.10 to 17.10.10		Closure of schools due to Common Wealth Games & Autumn Break	
Oct	18.10.10 To 23.10.10	5	Chapter 4 Carbon and its compounds- Unique properties of carbon. Bonding in Carbon Compounds. Covalent Bond.	Activities i. To study the arrangement of atoms in carbon and allotropes of C. ii. To observe the combustion of C –

			Homologous series. Nomenclature of Carbon compounds containing functional groups – Halogens, Alcohols, Ketones, Aldehydes, Alkenes, Alkynes. Saturated & Unsaturated Hydro carbons.	compounds such as camphor MCQ(IX) Exp.9 To prepare temporary mounts of onion peel and human cheek cell
Oct	25.10.10 To 30.10.10	6	Chemical properties of Carbon compounds such as combustion, oxidation, addition & substitution reactions. Ethanol & Ethanoic Acid – properties & uses. Soaps & detergents.	Practical 11 To study the following properties of Acetic Acid - Odour - Solubility in water - Effect on litmus - Reaction with NaHCO ₃ .
Nov	1.11.10 To 6.11.10	5	Chapter 15 Our Environment Eco-system, Environmental problems – Ozone depletion, waste production & their solution. Biodegradable & Non Bio degradable substances.	Project i. To prepare a project to depict Ozone layer, its depletion & solutions. ii. To depict an ecosystem of any of the following – - Pond - Tropical forest - Desert - Sea etc. iii. To calculate the amount of waste generated in school and home & write ways to reduce, reuse and recycle the waste.
Nov	8.11.10 To 12.11.10	5	Chapter 5 Periodic classification of elements Need for Classification, different classifications given by Doberneir, Newlands & Mendeleev. Modern Periodic table.	Activities To study the life & works of Mendeleev. MCQ(IX) Exp. 10 To identify Parenchyma and Sclerenchyma tissues in plants, striped muscle fibres and nerves cells in animals. MCQ(IX) Exp. 11 To separate the components of a mixture of sand, common salt and Ammonium Chloride by

				sublimation.
Oct	15.11.10 To 20.11.10	5	Gradation in properties, Valency, Atomic number. Metallic & Non metallic properties Text Questions.	Activities i. To find the relation between valence electrons & group number, No. of shell & (Periods). ii. To pick metal & Non metal from the elements of third period. MCQ(IX) Exp. 11 To determine the melting point of ice and the boiling point of water
Nov	22.11.10 To 27.11.10	6	Chapter 8 Reproduction – DNA, Software for Genetic information Variation in DNA copy Asexual modes of reproduction – fission, fragmentation, Regeneration, Budding, Vegetative propagation, Spore formation. Sexual mode of reproduction. Importance of variation in sexual reproduction – germ cells & zygote.	Activities i. To observe the formation of mould on bread. ii. To observe the culture of yeast under the microscope. iii. To observe the permanent slide of Amoeba and spirogyra under the microscope. iv. To grow plant using parts of the plant such as stem of a money plant or bud of a potato.
Nov / Dec	29.11.10 To 4.12.10	6	Sexual reproduction in flowering plants reproduction in Human Beings. Male & female reproductive. Systems. Reproductive health. Bacterial & viral infections in sexually transmitted diseases.	i. To study the longitudinal section of a flower. ii. To study the germinating seed of gram. Practical 12 a. To study the Binary fussion in Amoeba b. Budding in yeast with the help of prepared slides.
Dec	6.12.10 To 10.12.10	4	Chapter 9 Heredity & Evolution Heredity Rules for the inheritance of traits Mendel’s experiment.	To study the life & works of 1. Gregor Johann Mendel 2. Charles Darwin

			10-12-10 - Second C.C.E.P	<p align="center">MCQ(IX) Exp.13</p> <p>To test the presence of starch in the given food samples and the presence of Metanil Yellow in <i>daal</i></p> <p align="center">MCQ(IX) Exp.14</p> <p>To study the characteristic of spirogyra, Agaricus, Moss, Fern, Pinus and an angiospermic plant</p>
Dec	13.12.10 To 18.12.10	5	<p>Mendel's law – Independent inheritance of two separate traits, (shape & colour of pea) sex determination.</p> <p>Basic concepts of Evolution – acquired & inherited traits. Speciation. Analogous and Homologous organs fossils, Evolution by stages</p> <p>Text Question.</p>	<p>i. To prepare a project / report on Darwin's Theory of evolution.</p> <p align="center">MCQ(IX) Exp.15</p> <p>To observe and draw the given specimen – Earthworm, cockroach, Bony fish and Birds</p>
Dec	20.12.10 To 24.12.10	5	<p>Chapter 16 Management of Natural Resources Conservation and Judicious use of Natural resources. Forest & Wild life Coal & Petroleum. Conservation. People participation for conservation – sustainable practices. Water management Dams & rain water Harvesting Becoming environment friendly.</p>	<p>i. To prepare rain water harvesting model (from waste material)</p> <p>ii. To study the life of Bishnoi community & their contribution towards conservation of forests and wild life – story of Khejrli village.</p> <p>iii. To prepare a report on <i>Chipko</i> movement.</p> <p>iv. To debate on building Dams – benefits versus environment damage.</p>
	27.12.10 to 7.01.11		WINTER BREAK	
Jan	10.01.11 To 15.01.11	6	<p>Chapter 10 Light – Reflection & Refraction Laws of Reflection of light, Image in a</p>	<p>i. To observe the images formed on both sides of a large shining spoon.</p> <p>ii. To direct the sunlight reflected by the mirror</p>

			plane mirror, Spherical mirrors Image formation by spherical mirror Representation of these images with the help of ray diagrams. Uses of concave & convex mirrors. Sign convention for reflection by spherical mirrors Mirror formula and Magnification.	on a sheet of paper & obtain the bright sharp image of light.
Jan	17.01.11 To 22.01.11	6	Refraction of light Refraction through a rectangular glass slab, laws of refraction of light. Refractive index and its significance. Optical density Refraction by spherical lenses. Image formation by convex and concave lens.	Practical 13 i. To determine the focal length of concave mirror & convex lens by obtaining the image of distant object. Practical 14 To trace the path of ray of light passing through a rectangular glass slab for different angles of incidence, angle of refraction, angle of emergence & interpret the results.
Jan	24.01.11 To 29.01.11	5	Sign Convention for spherical lenses. Lens formula & magnification. Power of a lens.	
	31.01.11 To 05.02.11	6	Chapter 11 Human Eye and the colour full World. Human eye, Functioning of eye lens, defects & vision and their correction	Activity i. To identify the students in the class with eye defects and to suggest correction of vision through nutrition. ii. To study the path of light through a prism. iii. To study the scattering of light in colloidal solution
Feb	07.02.11 To 11.02.11	5	Application of spherical mirrors and lenses. Refraction of light through prism. Atmospheric Refraction, Scattering of light	Practical No. 15 To determine the percentage of water absorbed by raisins.

Feb	14.02.11 To 19.02.11		REVISION	
Feb	21.02.11 To 28.02.11		REVISION	
March	01.03.11 To 31.03.11		Second Semester Exam and Result	

Note: All projects given in the syllabus are suggestions, other related projects may also be taken.