

KENDRIYA VIDYALAYA SANGATHAN



SPLIT UP SYLLABUS

(SCIENCE STREAM)

Class – XII

2008-09

PREPARED BY

KENDRIYA VIDYALAYA SANGATHAN (Delhi Region)

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SCIENCE STREAM

Split-up Syllabus For Session 2008-09

Class-XII

English (Core)

Month	Periods	Flamingo	Periods	Supplementary Reader	Periods	Work Book	Periods	Writing Skills	Period
April 2008	23	The Last Lesson	4	The Third Level	4	Unit-1 Pronunciation	2	Letter Writing	2
		Poem–My Mother at Sixty-Six	2	The Tiger King	3	Unit-2 Pronunciation	2	Application For Job	2
								Letter of Enquiry	2
May/ June	10	Lost Spring	3	Journey to the end of the earth	3			Letter to Editor	2
		Poem–An Elementary School class room in a slum	2						
July	26	Deep Water	3	The Enemy	4	Unit-3 Modals	3	Notices	2
		Poem–Keeping Quiet	2	Should Wizard hit Mommy	4			Report Writing	4
								Note Making	4
August	24	The Rat Trap	4	On the Face of it	4	Unit-4 Adverbial	3	Advertisement	5
		Indigo	4					Exercise in Reading Comprehension	4

Sept.	25	Poets and Pancakes	4	Evans tries an o-level	3	Unit-5 Past Modification	2	Factual Description	3
		The Interview (Part I, II)	4			Unit-6 Preventing & focussing information	2	Article Writing	3
		Poem–A Thing of Beauty is a joy forever	2					Invitation	2
October	11	Going places	3	Memories of childhood	3			Poster	2
		Poem–A road side stand	3						
Nov.	23	Poem–Aunt Jennifer's Tiger	2	Supplementary Revision	4	Unit-7 Making a text	2	Letter writing Formal, Business	2
		Reader Revision	2	Reader of Reader	3	Aspects of Expression	4	Tips & hints letter of complaint	2
						Revision		2	
Dec.	17	Revision Discuss sample paper		Revision Discuss sample paper		Revision		Revision Discuss sample paper	

Ten (10) periods should be spared for Computer aided Learning

पाठ्यक्रम विभाजन 2008-09 (ग्रीष्मकालीन)

कक्षा-बारहवीं

हिन्दी (केन्द्रिक)

माह	आरोह भाग-2	वितान भाग-2 (प्रकाशनाधीन)	जनसंचार एवं रचनात्मक लेखन	कालांश
अप्रैल एवं मई	काव्य : हरिवंश राय बच्चन 1. आत्म परिचय, 2. एक गीत गद्य : महादेवी-भक्तिन	पाठ-एक	विभिन्न संचार माध्यमों का परिचय निबंध लेखन-सामाजिक विषयों पर	25
जून एवं जुलाई	काव्य : 1. आलोक धन्वा-पतंग 2. कुँवर नारायण-कविता के बहाने -बाती सीधी की पर गद्य : 1. जैनेन्द्र कुमार-बाजार दर्शन 2. धर्मवीर भारती-काले मेघा पानी दे	पाठ-दो	प्रिंट माध्यम-समाचार पत्र लेखन, औपचारिक पत्र, अनौपचारिक पत्र निबंध-समसामयिक	30
अगस्त	काव्य : 1. रघुवीर सहाय-कैमरे में बंद अपाहिज 2. मुक्तिबोध-सहर्ष स्वीकारा है गद्य : 1. फणीश्वर नाथ रेणु-पहलवान की ढोलक	पाठ-तीन	प्रिंट माध्यम-सम्पादकीय पत्र, कार्यालयी पत्र (विभिन्न प्रकार के) निबंध-विभिन्न विषयों पर	24
सितम्बर	काव्य : 1. शमशेर बहादुर सिंह-उषा 2. निराला-बादल राग गद्य : 1. विष्णु खरे-चार्ली चैप्लिन यानी हम सब 2. रजिया सज्जाद जहीर : नमक	पाठ-चार	प्रिंट माध्यम-रिपोर्ट एवं आलेख पत्र-रोजगार संबंधी पत्र -स्ववृत्त लेखन	23

अक्टूबर	काव्य : तुलसीदास-1. कवितावली 2. लक्ष्मण-मूर्च्छा और राम विलाप उमाशंकर जोशी-1. छोटा मेरा खेत गद्य : हजारी प्रसाद द्विवेदी-शरीष के फूल	पाठ-पाँच	फीचर लेखन (जीवन संदर्भों से जुड़ी घटनाओं और स्थितियों पर) अपठित बोध गद्यांश	18
नवम्बर	काव्य : उमाशंकर जोशी-बगुलों के पंख फिराक गोरखपुरी-1. रूबाइयाँ, 2. गजल गद्य : डा. अम्बेडकर-1. श्रम विभाजन और जाति प्रथा 2. मेरी कल्पना का आदर्श समाज	—	अपठित बोध पद्यांश निबंध सांस्कृतिक विषयों पर पत्र-विभिन्न समस्याओं पर विभागीय अधिकारियों को लिखे जाने वाले पत्र	22
दिसम्बर	बोर्ड-पूर्व परीक्षा-सुधार/संशोधन/पुनरावृत्ति	—	—	17
जनवरी 2009	बोर्ड पूर्व परीक्षा	संशोधन/सुधार	—	23
फरवरी 2009	बोर्ड पूर्व परीक्षा की प्रगति एवं परिणामों को ध्यान में रखते हुए सुधार एवं पुनरावृत्ति			23

Split-up Syllabus For Session 2008-09

Class XII

Physics

MONTH	TOPIC	DETAILED SPLIT UP/CONTENT OF UNIT	NO. OF DAYS
April	UNIT-I Electrostatics	<p>Electric charges and conservation of charge, Coulomb's law—force between two point charges, force between multiple charges; superposition principle and continuous charge distribution.</p> <p>Electric field, electric field due to a point charge, electric field lines; electric dipole, electric field due to a dipole; torque on a dipole in uniform electric field.</p> <p>Electric flux, statement of Gauss's theorem and its application to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).</p> <p>Electric potential, potential difference, electric potential due to a point due to a point charge, a dipole and system of charges; equipotential surfaces, electric potential energy of a system of two point charges and of electric dipole in an electrostatic field.</p> <p>Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor. Van de Graff generator.</p>	23
May and June	Unit-II Current Electricity	<p>Electric current, flow of electric charges in a metallic conductor drift velocity, mobility and their relation with electric current. Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electric energy and power, electrical resistivity and conductivity. Carbon resistors, color code for carbon resistors; series and parallel combinations of resistors; temperature dependence of resistance.</p>	10

		<p>Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and parallel.</p> <p>Kirchoff's laws and simple applications. Wheatstone bridge, metre bridge.</p> <p>Potentiometer—principle and its applications to measure potential difference and for comparing emf of two cells; measurement of internal resistance of a cell.</p>	
July	Unit-III Magnetic Effect of Current and Magnetism	<p>Concept of magnetic field. Oersted's Experiment.</p> <p>Biot-Savart law and its application to current carrying circular loop.</p> <p>Ampere's law and its applications to infinitely long straight wire, straight and toroidal solenoids.</p> <p>Force on a moving charge in uniform magnetic field and electric fields. Cyclotron.</p> <p>Force on a current-carrying conductor in a uniform magnetic field. Force between two parallel current-carrying conductors-definition of Ampere. Torque experienced by a current loop in uniform magnetic field; moving coil galvanometer its current sensitivity and conversion to ammeter and voltmeter.</p> <p>Current loop as a magnetic dipole and its magnetic dipole moment. Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular its axis. Torque on a bar magnet in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field magnetic elements. Para, Dia, Ferro-magnetic substances with examples. Electromagnets and factor affecting their strengths, Permanent magnets.</p>	26
August	UNIT-IV Electromagnetic Induction and Alternating Currents	<p>Electromagnetic induction; Faraday's law, induced E.M.F. and current; Lenz's law, eddy current, Self and mutual inductance.</p> <p>Need for displacement current.</p> <p>Alternate currents, and rms value and peak value of alternating current/voltage. Reactance and impedance; LC oscillation (Qualitative treatment only) LCR series circuits, resonance, power in AC circuit, wattless current AC generator and Transformer.</p>	24

	UNIT-V Electromagnetic Waves	Electromagnetic waves and their characteristics (qualitative idea only). Transverse nature of electromagnetic waves. Electromagnetic spectrum (Radio-microwaves, infra-red, optical, ultraviolet, X-ray, gamma rays) including elementary facts about their uses.	
September	UNIT-VI Optics	Reflection of light, spherical mirror, mirror formula. Refraction of light, total internal reflection and its applications, spherical lenses, thin lens formula, lens maker's formula. Magnification. Power of a lens, combination of thin lenses in contact. Refraction and dispersion of light due to an prism. Scattering of light–Blue color of the sky and reddish appearance of the sun–rise and sun-set. Optical instrument-Human eye, image formation and accommodation, correction of eye defects (myopia, hypermetropia, preskyopia and astigmatism) using lenses. Compound Microscope, astronomical telescope (refraction and reflection type) and their magnifying powers. Waves front and Huygen's principles. Reflection and refraction at a plane surface using wave fronts. Proofs of law of reflection and refraction using Huygen's principles. Interference Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction–diffraction due to a single slit, width of central maximum, difference between interference and diffraction. Resolving power of microscope and telescope; Polarization Plane polarized light, Brewster's law. Use of plane polarized and polaroids.	23
October	UNIT-VII Dual Nature of Matter and Radiation UNIT-VIII Atoms & Nuclei	Dual nature of radiation. Photoelectric effect, Hertz and Leonard's observations; Einstein's photoelectric equation-particle of light. Matter waves-wave nature of particles, De-Broglie relation. Davission-Germer Experiment. Alpha-particle scattering experiment; Rutherford's model of atom; Bohr Model, energy levels, hydrogen spectrum Composition and size of nucleus, atomic masses, isotopes, isobars, isotones. Radioactivity-alpha, beta and gamma particles/rays and their properties; radioactivity lays, mass energy relation mass defect, binding energy per nucleon and its variation with mass number; nuclear fission and fusion.	12

November	UNIT-IX Electronic Devices	Semiconductor, semiconductor diode–I-V Characteristics in forward and reverse bias, Diode as a rectifier; I-V characteristics for LED, Photo diode, solar cell, and Zener diode; Zener as voltage regulator. Junction transistor, transistor action, characteristics of a transistor, transistor as an Amplifier {common emitter configuration} and oscillator; Logic gates–(OR AND, NOT, NAND and NOR). Transistor as a switch.	23
	UNIT-X Communication	Elements of a communication system (block diagram only); band width of signals (speech, TV and digital data); band width of transmission medium. Propagation of electromagnetic waves in atmosphere, sky and space wave propagation. Need for modulation. Production and detection of an amplitude modulated wave.	
December		Remedial classes and preparation for pre-board and discussion of pre-board Q-paper/ sample paper.	
January		Preparation of II pre-board and question wise analysis of paper. Discussion of sample papers, at-least five Q-papers.	
February		Preparation of Final Examination.	

Practicals

Every student will perform 10 experiments (5 from each section) & 8 activities (4 from each section) during the academic year. Two demonstration experiments must be performed by the teacher with participation of students. The students will maintain a record of these demonstration experiments.

B. Evaluation Scheme for Practical Examination :

- | | |
|---|-----------------|
| • One experiment from any one section | 8 Marks |
| • Two activities (one from each section) | (4 + 4) 8 Marks |
| • Practical record (experiment & activities) | 6 Marks |
| • Record of demonstration experiments & Viva based on these experiments | 3 Marks |
| • Viva on experiments & activities | 5 Marks |

Total

30 Marks

SECTION-A

Experiments

1. To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
2. To find resistance of a given wire using metre bridge and hence determine the specific resistance of its material.
3. To verify the laws of combination (series/parallel) of resistance using a metre bridge.
4. To compare the emf of two given primary cells using potentiometer.
5. To determine the internal resistance of given primary cell using potentiometer.
6. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
7. To convert the given galvanometer (of known resistance and figure of merit) into an ammeter and voltmeter of desired range and to verify the same.
8. To find the frequency of the a.c. mains with a sonometer.

Activities

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To assemble the components of a given electrical circuit.
5. To study the variation in potential drop with length of a wire for a study current.
6. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

SECTION-B

Experiments

1. To find the value of v for different values of u in case of a concave mirror and to find the focal length.
2. To find the focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$.
3. To find the focal length of a convex mirror, using a convex lens.
4. To find the focal length of a concave lens, using a convex lens.
5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
6. To determine refractive index of a glass slab using a travelling microscope.
7. To find refractive index of a liquid by using (i) concave mirror, (ii) convex lens and (iii) plane mirror.
8. To draw the I-V characteristics curve of a p-n junction in forward a bias and reverse bias.
9. To draw the characteristic curve of a zener diode and to determine its reverse down voltage.
10. To study the characteristics of a common-emitter npn or pnp transistor and to find out the values of current and voltage gains.

Activities

1. To study effect of intensity of light (by varying distance of the source) on an L.D.R.
2. To identify a diode, an LED, a transistor, and IC, a resistor and a capacitor from mixed collection of such items.
3. Use of multimeter to (i) identify base of transistor, (ii) distinguish between npn and pnp type transistors, (iii) see the unidirectional flow of current in case of a diode and an LED, (iv) check whether a given electronic component (e.g. diode, transistor or IC) is in working order.
4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
5. To observe polarization of light using two Polaroids.

6. To observe diffraction of light due to a thin slit.
7. To study the nature and size of the image formed by (i) convex lens, (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

PRACTICALS

Month	No. of Experiments	No. of Activities
April	One (Section A)	Two (Section A)
June-July	Three (Section A)	Two (Section A)
August	One (Section A) One (Section B)	Two (Section B)
September	Two (Section B)	One (Section B)
October	Two (Section B)	One (Section B)
November	Revision of experiments and activities	
January	Revision/mock test and viva-voca based on experiments and Activities.	

Split-up Syllabus For Session 2008-09
Class XII

Chemistry (Theory)

70 Marks

Unit No.	Title	Marks
Unit I	Solid State	4
Unit II	Solutions	5
Unit III	Electrochemistry	5
Unit IV	Chemical Kinetics	5
Unit V	Surface chemistry	4
Unit VI	General Principles and Processes of Isolation of Elements	3
Unit VII	p-Block Elements	8
Unit VIII	d and f-Block Elements	5
Unit IX	Coordination Compounds	3
Unit X	Haloalkanes and Haloarenes	4
Unit XI	Alcohols, Phenols and Ethers	4
Unit XII	Aldehydes, Ketones and Carboxylic Acids	6
Unit XIII	Organic Compounds Containing Nitrogen	4
Unit XIV	Biomolecules	4
Unit XV	Polymers	3
Unit VI	Chemistry in Everyday Life	3
	Total	70

Chemistry (Practical) 30 Marks

Volumetric Analysis	10 Marks
Salt Analysis	06 Marks
Content based Experiment	04 Marks
Project	05 Marks
Class Record and Viva	05 Marks

Month	Distribution of Syllabus (Name of Unit and Detailed Split up)	No. of Periods
April-May	<p>Unit 1 : Solid State Classification of solids based on different binding forces; molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea), unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties.</p>	12
	<p>Unit II : Solutions Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties—relative lowering of vapour pressure, elevation of B.P., depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass.</p>	12
June-July	<p>Unit III : Electrochemistry Redox reactions, conductance in electrolytic solutions, specific and molar conductivity variations of conductivity with concentration, Kohlrausch's Law, electrolysis and laws of electrolysis (elementary idea), dry cell—electrolytic cells and Galvanic cells; lead accumulator; EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, fuel cells; corrosion.</p>	14
	<p>Unit IV : Chemical Kinetics Rate of a reaction (average and instantaneous), factors affecting rates of reaction; concentration, temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant, integrated rate equations</p>	12

	<p>and half life (only for zero and first order reactions); concept of collision theory (elementary idea, no mathematical treatment).</p> <p>Unit V : Surface Chemistry</p> <p>Adsorption–physisorption and chemisorption; factors affecting adsorption of gases on solids; catalysis; homogeneous and heterogeneous, activity and selectivity, enzyme catalysis; colloidal state; distinction between true solutions, colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation, emulsion-types of emulsions.</p>	08
August	<p>Unit VI : General Principles and Processes of Isolation of Elements</p> <p>Principles and methods of extraction–concentration, oxidation, reduction electrolytic method and refining, occurrence and principles of extraction of aluminium, copper, zinc and iron.</p> <p>Unit VII : p-Block Elements</p> <p>Group 15 elements : General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; nitrogen; preparation, properties and uses; compounds of nitrogen; preparation and properties of ammonia and nitric acid, oxides of nitrogen (structure only); Phosphorus-allotropic forms; compounds of phosphorus; preparation and properties of phosphine, halides (PCl_3, PCl_5) and oxoacids (elementary idea only).</p> <p>Group 16 elements : General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; dioxygen : preparation, properties and uses; simple oxides; Ozone, Sulphur-allotropic forms; compounds of sulphur; preparation, properties and uses of sulphur dioxide; sulphuric acid; industrial process of manufacture, properties and uses, oxoacids of sulphur (structures only).</p> <p>Group 17 elements : General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens : preparation, properties and uses of chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structures only).</p> <p>Group 18 elements : General introduction, electronic configuration. Occurrence, trends in physical and chemical properties, uses.</p> <p>Unit VIII : d and f Block Elements</p> <p>General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals–metallic character, ionization enthalpy, oxidation states,</p>	<p>08</p> <p>14</p> <p>14</p>

	<p>ionic radii, colour catalytic property, magnetic properties, interstitial compounds, alloy formation. Preparation and properties of $K_2Cr_2O_7$ and $KmNO_4$.</p> <p>Lanthanoids–Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction.</p> <p>Actinoids–Electronic configuration, oxidation states.</p>	
September	<p>Unit IX : Coordination Compounds Coordination Compounds–Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds, bonding; isomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological systems).</p> <p>Unit X : Haloalkanes and Haloarenes Haloalkenes : Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions. Haloarenes : Nature of C-X bond, substitution reactions (directive influence of halogen for monosubstituted compounds only). Uses and environmental effects of-dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.</p> <p>Unit XI : Alcohols, Phenols and Ethers Alcohols : Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only); identification of primary, secondary and tertiary alcohols; mechanism of dehydration, uses, some important compounds–methanol and ethanol. Phenols : Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols. Ethers : Nomenclature, methods of preparation, physical and chemical properties, uses.</p>	<p>12</p> <p>12</p> <p>12</p>
October	<p>Unit XII : Aldehydes, Ketones and Carboxylic Acids Aldehydes and Ketones : Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, and mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes; uses. Carboxylic Acids : Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses. Revision and Half Yearly Examination.</p>	12

Chemistry (Practicals)

30 Marks

Volumetric Analysis	10 Marks
Salt Analysis	06 Marks
Content Based Exp.	04 Marks
Record	05 Marks
Project	05 Marks
Total	30 Marks

Month	Exp. No.	List of Experiments	Apparatus	Materials
April, May	1.	Preparation of double salt of ferrous ammonium sulphate.	Beakers, China dish, wiregauge glass rod, tripod stand, Burner	Ferrous sulphate, Ammonium sulphate, sulphuric acid
	2.	Preparation of double salt of Potash alum	Do	Potassium sulphate, Aluminium sulphate, Sulphuric acid
	3.	Preparation of Lyophilic sol : – Starch/Egg albumin/Gum	Beaker, Glass rod, tripod stand, filter paper	Starch, Gum, Egg-albumin powder
	4.	Preparation of Lyophobic Sol : – Aluminium hydroxide/ Ferric hydroxide/Arsenic sulphide	Do	Aluminium hydroxide, Ferric hydroxide, Arsenic sulphide
June, July	5.	Separation of pigments from extracts of flowers by paper chromatography and determination of R _f values. OR Separation of constituents present in an organic mixtures containing two cations.	Chromatography jar/gas jar. Chromatography sheet whatman filter paper.	Water, alcohol
	6.	Effect of concentration on the rate of reaction between sodium thiosulphate and hydrochloric acid.	Conical flasks, Measuring cylinder, Test tubes	Sodium thiosulphate Hydrochloric acid
	7.	Effect of temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid.	Do thermometer	Water Do
	8.	acid study of the role of emulsifying agents in stabilizing the emulsion of different oils.	Measuring cylinder Bottles with lid.	Different oils, water soap/detergent

August	9.	Preparation of standard solution of M/10 Mohr's salt (250 ml) by direct weighing technique.	Measuring flask (250 ml) Beaker, Watch Glass Funnel, glass-rod Chemical Balance Weight box, fractional weights,	Mohr's salt, sulphuric acid, Distilled water
	10.	Determination of molarity and strength of KMnO_4 solution by titrating it against the standard solution of Mohr's salt.	Burette, Pipette Conical flask Stand testtube	KMnO_4 solution Mohr's salt solution Sulphuric acid
	11.	Determine the percentage purity of the given solution of KMnO_4 by titrating it with standard solution of Mohr's salt.	Do	Do
	12.	Preparation of Standard solution of M/20 oxalic acid (250 ml) by direct weighing technique.	As in Exp-9	
	13.	Determination of molarity and strength of KMnO_4 solution by titrating it against the standard solution of oxalic acid.	As in Exp-10	Oxallic acid Distilled Water
Sept.	14-19	Determination of one cation and one anion in the given salt Cation : Pb^{2+} , Al^{3+} , Cu^{2+} , As^{3+} , Fe^{3+} , Zn^{2+} , CO^{2+} , Mn^{2+} , Ni^{2+} , Ca^{2+} , Ba^{2+} , Mg^{2+} , NH_4^+ , Anion : S^{2-} , SO_3^{2-} , SO_4^{2-} , CO_3^{2-} , NO_2^- , NO_3^- , Cl^- , Br^- , PO_4^{3-} , CH_3COO^- , $\text{C}_2\text{O}_4^{2-}$ "Insoluble ions are to be excluded"	Beakers, Salt Bridge Cu & Zn	Do CuSO_4 ZnSO_4
Oct.	20.	Variation of cell potential in $\text{Zn}/\text{Zn}^{2+}/\text{Cu}^{2+}/\text{Cu}$ with change in concentration of electrolytes (CuSO_4 or ZnSO_4) at room temperature.		

	21-23.	Tests for functional groups in organic compounds. Alcoholic, Phenolic, Aldehydic, Ketonic, Carboxylic, acid, Primary amino gp and unsaturation.	Voltmeter	
Nov.	24-26 27.	Detection of carbohydrates, fats and proteins in given food stuffs. Preparation of any one of the following (i) Iodoform (ii) Acetanilide, (iii) Di-Benzal acetone, (iv) p-nitroacetanilide, (v) Aniline yellow, (vi) β -Naphthol-aniline dye.		
Dec.	28.	Investigatory Project.		

	<p>3. Integrals : Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, only simple integrals of the type.</p> $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{x^2 - a^2}}, \int \frac{dx}{\sqrt{ax^2 + bx^2 + c}}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$ $\int \frac{(px + q)}{ax^2 + bx + c} dx, \int \frac{(px + q)}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2} dx \text{ and } \int \sqrt{x^2 - a^2} dx$ <p>to be evaluated. Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.</p> <p>4. Applications of the Integrals : Applications in finding the area under simple curves, especially lines, areas of circles/ parabolas/ellipses/ (in standard form only), area between the two above said curves (the region should be clearly identifiable).</p>	20	
Sept.	<p>Unit III. CALCULUS</p> <p>5. Differential Equations : Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type :</p> $\frac{dy}{dx} + p(x)y = q(x)$ <p>where $p(x)$ and $q(x)$ are functions of x.</p>	10	20

	<p>Unit IV : VECTORS AND THREE-DIMENSIONAL GEOMETRY</p> <p>1. Vectors : Vectors and scalars, magnitude and direction of a vector. Direction cosines/ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of point negative of a vector, components of a vector, Addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors.</p>	10	
October	<p>Unit IV : VECTORS AND THREE-DIMENSIONAL GEOMETRY</p> <p>2. Three-dimensional Geometry : Direction cosines/ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes, (iii) a line and a plane. Distance of a point from a plane.</p> <p>Unit V : LINEAR PROGRAMMING</p> <p>1. Linear Programming Introduction, definition of related terminology such as c constraints function, optimization, different types of linear programming (L.P.) problems mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optional feasible solutions (up to three non-trivial constrains).</p>	12	
		12	24
Nov.	<p>Unit VI : PROBABILITY</p> <p>1. Probability Multiplication theorem on probability. Conditional probability, independent events, total probability, Baye's theorem, Random variable and its probability distribution, mean and variance of haphazard variable. Repeated independent (bemoulli) trials and Binomial distribution.</p>	18	18

Dec.	NOTE		
Jan. &		Revision of whole syllabus and first pre-board examination	
Feb.		Remedial classes after selecting slow learners on the basis of first pre-board exam.	

TENTATIVE SCHEDULE FOR UNIT TEST/EXAMINATIONS

- | | | | |
|----|--------------------|-------|-------------------|
| 1. | I Term Unit Test | _____ | 2nd Week of July |
| 2. | II Term Unit Test | _____ | 3rd Week of Sept. |
| 3. | H.Y. Examination | _____ | 2nd Week of Nov. |
| 4. | Pre Board Exam. I | _____ | 2nd Week of Dec. |
| 5. | Pre Board Exam. II | _____ | 3rd Week of Jan. |

Split Syllabus For Session 2008-09

Class XII

Biology (Theory)

Unit	Chapters	Marks
1.	Sexual Reproduction	12
2.	Genetics & Evolution	20
3.	Biology & Human Welfare	12
4.	Biotechnology & its applications	12
5.	Ecology & Environment	14
Total		70

MONTH	NAME OF THE UNIT	DETAILED SPLIT UP/ CHAPTERS ACCORDING TO NCERT BOOK	PERIOD FOR CLASS ROOM TEACHING	SUGGESTED COMP. AIDED LEARNING
April & May	Reproduction (Unit VI)	<p>Chapter 1-3 Reproduction in organisms; sexual reproduction in flowering plants; Human reproduction</p> <p>Practicals : (1) Study of pollen germination on a slide. (2) Study of flowers adapted to pollination by different agencies. (3) Study & identify stages of gametic development i.e. T.S. of Testis & T.S. of ovary from permanent slides.</p>	18+4	03
June	Reproduction (Contd.) (Unit VI)	<p>Chapter 4 Reproductive health</p> <p>Practicals : (1) Study of T.S. of Blastula through permanent slide.</p>	05	01

July	Genetics & Evolution Unit (VII)	Chapter 5, 6 Principles of inheritance & variation Molecular basis of inheritance Practicals : (1) Study of meiosis from prepared slides. (2) Study of pedigree from prepared charts.	22	03
August	Genetics & Evolution (Contd.) (Unit VII) Biology in Human Welfare (Unit VIII)	Chapter 7 Evolution Chapter 8 Human Health & Diseases Practicals : (1) Study of analogous & homologous organs (2) To identify common diseases (3) Exercise on controlled pollination–emasculation, tagging etc.	22	02
Sept.	Biology in human welfare (Contd.) (Unit VIII) Biotechnology	Chapters 9, 10 Strategies for enhancement in food production; Microbes in human welfare Biotechnology : Principles & Processes Practicals : (1) Study & comment on Xerophytic plants, animals (2) Study of plants & animals found in aquatic ecosystem. (3) Collect water from water bodies & study pH, clarity etc.	20	02

October	Biotechnology (Contd.) (Unit IX) Ecology (Unit X)	Chapters 12, 13 Biotechnology & its application Organisms & population Practicals : (1) Collect & study soil, texture, moisture etc. (2) Study pH & water holding capacity of different soil samples. (3) Study presence of suspended particulate matter in air.	16	02
Nov.	Ecology (Contd.) (Unit X)	Chapters 14, 15, 16 Ecosystems, Biodiversity & Conservation, Environmental issues Practicals : (1) Population density & population frequency by quadret method.	21	02

Split-up Syllabus For Session 2007-08

Class XII

Computer Science

MONTH	TOPICS	PERIODS
April-May	<p>C++ Revision Tour Introduction, OOP Concepts, Procedural Vs. OOP Programming, OOP Terminology and Features, C++ Basics, C++ Character Set, Tokens, Data Handling, C++ Types, Variables, Formatting Outputs, Operators and Express, I/O Operators, Arithmetic Operators, Increment/Decrement Operators, Relational Operators, Logical Operators, Conditional Operators, Precedence of Operators, Expressions, C++ Shorthand.</p> <p>Flow of control, Selection Statements, Iteration and Jump statements, Unformatted Console I/O Functions, Unformatted stream I/O functions, Arrays, Single Dimensional, two Dimensional arrays and array initialization, Functions, Function Definition, Default and Constant Arguments, Call By Value, Call By Reference, Calling Functions with arrays, Recursion, Returning from a function, Scope Rules, Storage Class Specifiers, Variables and Functions.</p> <p>Structures Referencing Structures Elements, Initializing Structure Elements, Structure Assignments, Nested Structures, Accessing nested structure members, Array of structures, Array within Structures, Passing Structure elements to functions, Returning structures from functions, User defined data types, # define preprocessor directives.</p> <p>Object-Oriented Programming Various Programming Paradigms, Procedural Programming, Object Based Programming, Object Oriented Programming, OOP Concepts, Implementing Objects, Implementing Data Hiding, Data Abstraction and Encapsulation, Implementing Inheritance, Implementing Polymorphism, Advantages of OOP.</p>	20
June-July	<p>Classes and Objects Classes Need for Classes, Declaration of Classes, Referencing Class Members, Arrays within a Class, Scope of Class and its members, Types of Class Functions, Nested Classes. Data Hiding and Encapsulation, Functions in a Class. Infinite functions Constant Member Functions, Nesting of Member Functions, Scope Resolution Operator, Memory Allocation of Objects, array of Objects, Objects as Function Arguments, Functions returning Objects, Static Class members.</p>	22

	<p>Constructors and Destructors Need for Constructors, Declaration and Definition, Default Constructors, Parameterized Constructors, Copy Constructors, Order of Constructor Invocation, Dynamic Initialization of Objects, Constructor Overloading, Special Characteristics of Constructors, Need of Destructors, Declaration and Definition, Some Characteristics of Destructors.</p> <p>Inheritance : Extending Classes Need of Inheritance, Different forms of Inheritance, Derived and Base Classes, Single Inheritance, Multiple Inheritance, Visibility Modes, Inheritance and Access Control in Publicly Derived Class and Privately derived class, making a Private member inheritance, Constructor in Multiple Inheritance, Virtual Base Class, Multilevel Inheritance, Nesting of Classes.</p>	
August	<p>Data File Handling The fstream.h Header file, data files, Opening and Closing files, Steps to Process a file in your program, Changing the Behaviour of Streams, Sequential I/O with files, Detecting EOF, File pointers and Random Access, Basic operations (searching, appending, inserting, deleting and modifying) operations on Binary files. Error handling during I/O.</p> <p>Pointers C++ Memory Map, Dynamic and Static memory allocation, Free Store, Pointer Arithmetic, Memory Leaks, Pointers and arrays, Pointers and const, Pointers and functions, Pointers and Structures, Self-referential Structures, Dynamic Structures, Passing Objects through Call-By-Value, Passing Objects through Call-By-Reference, Pointers and Objects, The this Pointer.</p>	20
September	<p>Arrays Elementary Data Representation, Primitive and Non-Primitive Data Types, Different Data Structures-Arrays, Structure, Stacks, Queues, Linked List, Trees, Operations on Data Structures, Need of Array, Types of Arrays, Basic operations on one-dimensional arrays, Two-Dimensional Array.</p> <p>Linked Lists, Stacks and Queues Need for Linked Lists, Memory Allocation (Dynamic Vs. Static), Singly Linked Lists, Basic operations on single linked lists, Stacks, Stacks as an array, Stack as a Linked List, Application of Stacks, Queues, Queue as an array, Linked Queues.</p>	26

October	<p>Database Concepts</p> <p>Purpose of Databases, Database Abstraction, Various levels of Database Implementation, Concept of Data Independence, Different data models, Relation data Model, Network Data Model, Hierarchical Data Model, Structure of Relational Databases, Terminology, Views, Relational Algebra, Comparisons of data models. Structured Query Language</p> <p>Introduction, Processing capabilities of SQL, Data Definition Language, Data Manipulation Languages, SQL Processing, Concept of Data types, SQL commands and functions, Built-in functions, More DDL Commands.</p>	14
November	<p>Boolean Algebra</p> <p>Development of Boolean Algebra, Binary valued Quantities, Logical Operations & Operators, Evaluation of Boolean Expression using Truth Table, Basic Logic Gates, Inverter, OR Gate, AND Gate, Basic postulates of Boolean Algebra, Properties of 0 and 1, Indempotence Law, Some other rules of Boolean Algebra, Demorgan's First Theorem, Demorgan's Second Theorem, Derivation of Boolean Expressions, Minterms, Maxterms, Cononical Expression, Minimization of Boolean Expression, Algebraic method, Simplification using Karnaugh Maps, Sum-of-Products Reduction using K-Map, Products-of-sum using K-Map, NOR Gate, NAND Gate, XOR Gate, XNOR Gate, NAND to NAND and NOR to NOR design.</p>	18
December	<p>Communication and Network Concepts</p> <p>Network, Need of Networking, Network Goals, Applications of Networks, Evolution of Networking, ARPANET, The Internet, The Interspace, Elementary Terminology of Networks, Switching Techniques, Circuit Switching, Message Switching, Packet Switching, Transmission Media, Twisted Pair Cable, Coaxial Cable, Optical Fibre, Guided Media Compared, Micro wave, Radio wave, Satellite, Other Unguided Media, Data Communication Technologies, Types of Networks, LAN, MAN, WAN, comparing these Networks. Network Topologies, Point-to-Point Link, Star Bus, Ring, Tree, Graph, Mesh and Fully connected topoogy, Network devices, Modem, Ethernet Card, Hub, Switch, Repeater, Bridge, Router, Gateway, LAN Design, Network Components Checklists, Communication Protocols, HTTP, FTP, TCP/IP, SLIP/PPP, Wireless Vs. Mobile Computing Technologies, Internet Working Terms and Concepts, Network Security.</p>	12