

Class – XII (Science) (2010-2011)
English

March

Literature

1. The last lesson
2. My Mother at Sixty Six

Language

1. Notices
2. Advertisements
3. Invitation Replies
4. Posters

April

Literature

1. Lost Spring
2. The Third level
3. The tiger king
4. An Elementary classroom in a slum

Language

1. Comprehension
2. Report Writing
3. Note Making

May

Literature

1. Deep Water
2. Keeping Quiet

Language

1. Letter to the Editor
2. Articles

July

Literature

1. The Rat trap
2. Journey to the end of the earth
3. Indigo

Language

1. Job Application
2. Report

August

Literature

1. The Enemy
2. A thing of Beauty
3. Aunt Jennifer's Tigers

Language

1. Invitation Replies

September

Literature

1. Poets and Pancakes
2. A roadside stand
3. Should Wizard Hit Mommy
4. The Interview

Language

1. Reports

October

Literature

1. On the face of It
2. Memories of Childhood

Language

1. Articles

November

Literature

1. Evans Tries on O-level
2. Going Places

Language

1. Notices

December

Revision

Mathematics

Ist Term

(April - August)

April /May

1. Matrices and Determinants.
2. Continuity and Differentiability

July

1. Inverse Trigonometric functions.
2. Applications of derivatives
3. Indefinite integrals

August

1. Definite Integrals
2. Applications of definite Integrals

2nd Term

(September – February)

September

1. Differential equations
2. Vectors

October

1. Three dimensional Geometry
2. Linear Programming

November

1. Probability
2. Relations and functions

December

Revision

January/
February

Revision

PHYSICS
Class XII (2010-2011)

<u>MONTH</u>	<u>TOPICS</u>
<u>FIRST TERM</u>	
MARCH:	ELECTROSTATICS Electrostatics, Coulomb's law, charges, Electric field Intensity, Electrostatic force, Electrostatic Potential, Electrostatic potential energy, Gauss's law, Capacitors, Equipotentials, Van de Graaff Generator.
APRIL:	CURRENT ELECTRICITY Current Electricity, Ohm's law, Kirchoff's law, Resistors in series and in parallel, Measurement of current, resistance, e.m.f. Potential difference and internal resistance, Metre bridge, Potentiometer, Wheatstone bridge.
MAY:	MAGNETIC EFFECT OF AN ELECTRIC CURRENT AND MAGNETISM Biot Savart Law, Lorentz force, moving coil galvanometer, ammeter, voltmeter, forces on parallel current carrying wires, Cyclotron. Magnets, current loop as a magnetic dipole, Geomagnetism, diamagnetism, paramagnetism and ferromagnetism, electromagnetism and permanent magnets.
JULY:	ELECTROMAGNETIC INDUCTION AND ALTERNATING CURRENT CIRCUITS. Induced e.m.f. Faraday's Law, Lenz's Law, self and mutual Induction. Resonant series circuits. Transformer, Generator.
AUGUST:	ELECTROMAGNETIC WAVES Brief history of e.m.w. Hertz experiment, electromagnetic spectrum, sky and ground wave propagation.
SEPTEMBER:	WAVE OPTICS AND RAY OPTICS Huygen's Principle, reflection, refraction, interference, diffraction, polarization, Refraction, Dispersion, Optical Instruments, Telescope, Microscope and Spectrometer. Resolving Power
<u>SECOND TERM</u>	
OCTOBER:	DUAL NATURE OF MATTER AND RADIATION Photons, Photoelectric effect and Photocells, Dual nature of matter, Germer Davisson Experiment.
	ATOMS AND NUCLEI Nucleus, Radioactivity, Fission and Fusion, Mass Defect and Binding Energy, Nuclear Forces.
NOVEMBER:	ELECTRONIC DEVICES Solids and Semiconductor Devices, Band Theory, Diodes, Transistors, Rectifiers, Amplifier, Oscillator, Voltage Regulator, Gates.
	COMMUNICATION Analog and digital communication, Modulation, Demodulation, Space, Sky wave and Satellite Communication.

CHEMISTRY

FIRST TERM	
April/May	Solutions Solid State Co-ordination Compounds General Principles and processes of isolation of elements
July	Haloalkanes and Haloarenes: Alcohols, Phenols and Ethers Aldehydes, Ketones and Carboxylic Acids.
August	Organic compounds containing Nitrogen Electro Chemistry Chemical Kinetics
September	Surface Chemistry .
SECOND TERM	
October	Polymers Bio molecules
November	Chemistry in everyday life P- Block Elements d and f Block Elements
December	Revision

BIOLOGY

Zoology

Ist Term	(April - August)
March /April	CHAPTER 3 – HUMAN REPRODUCTION Male and Female Reproductive systems , Gametogenetics, Menstrual Cycle , Fertilization and Implantation , Pregnancy and Embryonic development , Parturition and Lactation .
May	CHAPTER 4 – REPRODUCTIVE HEALTH Reproductive health – Problems and Strategies , Population explosion and Birth Control , Medical termination of Pregnancy , Sexually transmitted diseases , Infertility .
July /August	CHAPTER 5 – PRINCIPLES OF INHERITANCE AND VARIATION Mendel’s laws of Inheritance , Inheritance of one gene , Inheritance of two genes , sex determination , Mutation , Genetic disorders.
September	CHAPTER 6 – MOLECULAR BASIS OF INHERITANCE The DNA , The search for genetic material , R.N.A world , Replication Transcription , Genetic Code , Translation , Regulation of gene expression , Human genome project , DNA finger printing .
2nd Term	(October – February)
October	CHAPTER 11 – BIOTECHNOLOGY : PRINCIPLES AND PROCESSES Principles of Biotechnology , Tools of Recombinant D.N.A Technology , Process of Recombinant D.N.A Technology .
November	CHAPTER 13 – ORGANISMS AND POPULATIONS Organisms and its environment . Populations . CHAPTER 14 – ECOSYTEM Ecosystem – Structure and Function , Productivity, Decomposition , Energy flow , Ecological pyramids , Ecological succession , Nutrient cycling , Ecosystem Services .
December	CHAPTER 15 – BIODIVERSITY AND CONSERVATION Biodiversity , Biodiversity and conservation.

Botany

Ist Term **(April - August)**

April / May CHAPTER 1 – Reproduction in organisms. Reproduction – meaning , types asexual reproduction & its types , negetative propagation . Sexual reproduction . Phases in life . Events in sexual reproduction- Pre fertilization & post Fertilization.

July CHAPTER 2 – Sexual reproduction in flowering plants
Flower – a fascinating organ of Angiosperms . Structure & development of male & female reproductive organs.
Pollination & its types. Outbreeding devices,pollen pistil interaction , artificial hybridization . Double fertilization.
Post fertilization changes, seed , fruit , parthenocarp.
Apomixis & Polyembryony.

August CHAPTER 7 – EVOLUTION
Origin of life . Evolution of life forms – A theory .
What are the evidences for Evolution ? What is adaptive radiation ? Biological Evolution. Mechanism of evolution .Hardy Weinberg principle . A brief account of evolution. Origin & evolution of man .

September CHAPTER 8 – HUMAN HEALTH & DISEASES
Common diseases in humans . Immunity AIDS , Cancer ,
Drugs and alcohol abuse.

2nd Term **(Octoberr – February)**

October CHAPTER 9 – STRATEGIES FOR ENHANCEMENT IN
FOOD PRODUCTION
Animal husbandry. Plant breeding. Single cell proteins.
Tissue culture.

November CHAPTER 10 – MICROBES IN HUMAN WELFARE
Microbes in household products. Microbes in industrial products. Microbes in sewage treatment . Microbes in production of biogas . Microbes as biocontrol agents.
Microbes as biofertilizers.

December CHAPTER 12 – Biotechnology & its applications.
Biotechnological applications in medicine Transgenic Animals . Ethical issues.
CHAPTER 16 – Environmental issues
Air pollution & its control. Water pollution & its control.
Solid wastes, Agrochemicals & their effects. Radioactive Wastes . Greenhouse effect & global warming. Ozone

depletion in the stratosphere. Degradation by Improper resource utilization & maintenance. Deforestation.

Revision

Computer Science

1 st Term	(March-September)
March	UNIT-1 Programming In C++
Review: C++ covered in Class -XI	
Object Oriented Programming:	
Concept of Object Oriented Programming-Data hiding, Data Encapsulation, Class and Object, Abstract class and Concrete class, Polymorphism (Implementation of Polymorphism using Function overloading as an example in C++ ;Inheritance, Advantages of Object Oriented Programming over earlier programming methodologies.	
April - May	
Implementation of Object Oriented Programming concepts in C++:	
Definition of a Class, Members of a class-Data Members and Member Functions (methods), Using Private and Public visibility modes, Default visibility mode (private); Member function definition: inside class definition and outside class definition using scope resolution operator (::); declaration of objects as instances of a class; accessing members from objects, Array of type class, Objects as function arguments -pass by value and pass by reference;	
Constructors and Destructors:	
Constructor: Special Characteristics, Declaration and Definition of a constructor ,Default Constructor, Overloaded Constructors, Copy Constructors, Constructors with default arguments;	
Destructor: Special characteristics ,Declaration and definition of destructor;	
Inheritance(Extending Classes):	
Concept of Inheritance, Base Class, Derived Class, Defining derived classes ,protected visibility mode; Single level Inheritance ,Multilevel inheritance and Multiple inheritance ,Privately derived ,Publicly derived and Protectedly derived class, accessibility of members from objects and within derived class(es);	
Detailed Assignment on the above topics for the Holiday Homework .	
July	
Data File Handling:	
Need for a data file, Types of Data files-Text files and Binary files;	
Text file : Basic file operations on text file; Creating/Writing text into file, Reading and Manipulation of Text from an already existing text File(accessing sequentially);	
Binary file: Creation of file, Writing data into file, Searching for required data form file ,Appending data to a file ,Insertion of data in sorted file ,Deletion of data from file, Modification of data in a file;	
Implementation of above mentioned data file handling in C++;	
Components of C++ to be used with file handling:	
Header files: fstream.h, ifstream, ofstream classes ;	
Opening a text file in in , out , and app modes;	
Using cascading operators for writing text to the file and reading text from the file ; open() , get() , put() , getline() and close() functions; Detecting end-of-file (with or without using eof() function) ;	
Opening a binary file using in , out , and app modes;	

Open(), read(), write() and close() functions; Detecting end-of-file (with or without using eof() function);tellg() ,tellp() ,seekg() ,seekp() functions

Preparation of outlines for the Project. Graphic commands and other functions related to the project given to the students.

August

Pointers:

Declaration and Initialization of Pointers; Dynamic memory allocation/deallocation operators: **new, delete**; Pointers and Arrays: Array of Pointers, Pointer to an array (1 dimensional array), Function returning a pointer, Reference variables and use of Alias; Function call by Reference, Pointer to structures; Deference operator;*, -> ,self referential structures;

*** Raw Project Report Submission**

September **UNIT-2 DATA STRUCTURES**

Arrays

One and two-dimensional arrays: Sequential allocation and address calculation;

One dimensional array: Traversal, Searching (Linear, Binary Search), Insertion of an element in an array, deletion of an element from an array, Sorting (Insertion, Selection, Bubble sort), concatenation of two linear arrays, merging of two Sorted arrays ;

Two -dimensional arrays: Traversal, Finding sum/difference of two N x M arrays containing numeric values, Interchanging Row and Column elements in a two dimensional array;

2nd Term

(October -February)

October

Stack (Array and Linked Implementation of Stack):

Operations on Stack (PUSH and POP) and its Implementation in C++, Converting Expressions from INFIX to POSTFIX notation and evaluation of Post fix notation of Expression ;

Queue:(Circular Array and Linked Implementation):

Operations on Queue (Insert and Delete) and its implementation in C++ .

November

Unit-3 DATABASES AND SQL

Database Concepts:

Relational data model: Concept of domain,tuple ,relation ,key ,primary key, alternate Key, candidate key;

Relational algebra: Selection, Projection, Union and Cartesian Product;

Structured Query Language:

General Concepts: Advantages of using SQL, Data Definition Language and Data Manipulation Language;

Data Types: NUMBER, CHARACTER, DATE;

SQL Commands

CREATE TABLE,DROP TABLE,ALTER TABLE,UPDATE ...SET..., INSERT, DELETE;

SELECT,DISTINCT,FROM ,WHERE,IN,BETWEEN,GROUP BY,HAVING ,ORDER BY;

SQL functions: SUM (), AVG(),COUNT(), MAX() and MIN();

Unit-4 Boolean Algebra

Binary -Valued Quantities, Boolean Variable, Boolean Constant and Boolean Operators: AND,OR,NOT;Truth Tables; Closure Property ,Commutative Law, Associative Law, Identity law, Inverse law, Principle of Duality,Idempotent Law ,Distributive Law ,Absorption Law, Involution law,De-Morgan's Law and their applications;

Obtaining Sum Of Product (SOP) and Product Of Sum (POS) form from Truth Table, Reducing Boolean Expression (SOP and POS) to its minimal form, Use Of Karnaugh Map for Minimisation Of Boolean Expressions (up to 4 variables);

Applications of Boolean Logic :

I Digital electronic circuit design Logic Gates (NOT , AND , OR , NAND , NOR)

II Use of Boolean operators (AND, OR) in SQL SELECT statements.

I Use of Boolean operators (AND , OR) in search engine queries

December UNIT-5 Communication And Open Source Concepts

Evolution OF Networking: ARPANET, Internet, Interspace;

Different ways of sending data across the network with reference to switching techniques;

Data Communication terminologies: Concept of Channel, Band, Bandwidth (Hz, Khz, Mhz) and Data transfer rate (bps, kbps, Mbps, Gbps, Tbps) ;

Transmission media : Twisted pair cable ,coaxial cable, Optical fibre ,Infrared , radio link , microwave link and satellite link .

Network Devices: Modem, RJ45 connector, Ethernet Card, Hub, Switch,Gateway;

Network Topologies and types :Bus, Star, Tree; Concepts of LAN, WAN, MAN ;

Network Protocol: TCP/IP, File Transfer Protocol (FTP), PPP, Level -Remote Login (Telnet), Wireless/Mobile Communication protocols such as, GSM, CDMA, GPRS, WLL;Electronic Mail protocol such as SMTP , POP3 , iMAP , Chat, Video Conferencing ;
VoIP protocols such as Wi-Fi and Wi-Max

Network Security Concepts:

Threats and prevention from Viruses , Worms , Trojan horse , Spams

Use of Cookies , Protection using Firewall ;

India IT Act , Cyber Law , Cyber Crimes , IPR issues , Hacking .

Web Services : Hyper Text Markup Language (HTML), eXtensible Markup Language (XML); Hyper Text Transfer Protocol (HTTP); Domain Names; URL; IP Address ;Website, Web browser, Web Servers; Web Hosting ,Web Scripting – Client side (VB script , Java Script , PHP) and Server side (ASP , JSP , PHP) , Web 2.0 (for social Networking)

Open Source Terminologies :

Open Source Software , Freeware , Shareware , Proprietary software , FLOSS , GNU , FSF , OSI ;

Home Science

Ist Term

(April - August)

April &
May

Things I can do with Home Science .
Know little children – aspects of Growth & Development.

Childhood Diseases.

July	Special needs of Disadvantaged children . Substitute child-Care.
August	Nutrition for self and family .Meal Planning for families and Individuals . Modifications for special conditions .
September	Water for good Health . Food Hygiene & Food Adulteration

2nd Term	(October – February)
October	Money Management. Consumer Education . Family Income & Expenditure Savings & Investments. Consumer Aids .
November	Consumer Problems . Consumer Protection Act (COPRA) My Apparel – clothing in relation to Personality. Care of Clothes . Quality and Workmanship of Readymade Garments. Stain Removal.
December	Clothing Practicals .Stitches & Seams . Fasteners & Draftings.
January	Revision

Economics

Ist Term	(April - September)
April	Introduction Consumer's equilibrium and demand. Producer behaviour and supply .
May	Forms of market and price determination . Simple application of tools of demand and supply .
July	National Income and related aggregates
August	Money and Banking
September	Determination of Income and employment.

2nd Term	(October – February)
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October Government Budget and the economy

November Balance of Payments.

December Revision