

Biology 1(Botany)

Month	Chapters
June	<p>Chp.5 :Microbes in human welfare</p> <p>Microbes as source of food; Industries; Sewage Treatment; Biogas production;Biocontrol agents :Biofertilizers.</p> <p>Chp.6: Photosynthesis</p> <p>Ultrastructure of chloroplast;Nature of light ;Light reaction; Dark reaction ; Photo Respiration; C₄ Cycle ;CAM cycle.</p>
July	<p>Chp.7: Respiration</p> <p>Ultrastructure of Mitrochondria; Oxidative phosphorylation ;Gylcolysis ;Krebs cycle;E.T.S;Anaerobic respiration.</p> <p>Chp.9 Organisms and Environment -I</p> <p>Ecosystem and its components; Nutrient cycles in Ecosystem ,Environmental issues.</p>
August	<p>Chp.1 :Genetic basis of inheritance</p> <p>Terminology; Law of dominance; law of segregation; law of independent assortment; post mendelian work; polygenic inheritance.</p>

September

Chp:8 Reproduction in plants

Structure of Flower ;Development of male gametophyte,
Development of female gametophyte ,post fertilization changes,seed.

October

Chp:2 Gene: It's Nature Expression and regulation.

Griffith experiment, Packaging of DNA; Watson and crick model of
DNA; Replication of DNA; RNA and types ; Genetic code;LAC operon

Chp:3 Biotechnology: Process and Application

DNA Technolgy; Lytic Cycle;Transgenic plant; PCR;.....contd.

November

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December

Chp:3 Biotechnology

Chp:4 Enhancement in Food Production

Plant Breeding; Methods of plant Breeding;Tissue Culture ;
application of tissue culture.

Year Plan 2015-16

STd XII

Sub: Biology-II (zoology)

June

2015

Chapter:15 Circulation

Submits

1. Introduction
2. Blood composition and coagulation 15.1
3. Structure and pumping action of heart 15.2
4. Blood vessels 15.3
5. Pulmonary systemic circulation 15.4
6. Heart beat and pulse 15.5
7. Rhythmicity of heart beat 15.6
8. Blood related disorders 15.7
9. ECG 15.8
10. Lymphatic system 15.9
11. Summary

June

2015

Chapter 12: Genetic Engineering Genomics

1. Introduction
2. DNA Finger printing 12.1
3. Genomic and Human Genome project 12.2
4. Biotechnological Application for Human health 12.3
5. Summary

July

2015

Chp:18 Human Reproduction

Submits

1. Introduction
2. Asexual Reproduction:-Human Reproductive System
3. Sexual Reproduction :-Human Reproductive System
4. Human Male Reproduction System 18.1
5. Human Female reproductive system 18.2
6. Menstrual cycle /Female reproductive cycle/Ovarian cycle18.3
7. Gametogenesis (str and production of gametos)18.4
8. Fertilization (syngamy)18.5
9. Embryonic development upto three Germinal layer 18.6
10. Pregnancy ,placenta ,Parturation & Lactutirn 18.7
11. Reproductive health 18.8
12. Summary

July

2015 Chp.11 Chromosomal basis of inheritances

Submit

- 1) Introduction
- 2) The chromosomal theory 11.1
- 3) Chromosomes 11.2
- 4) Linkage & crossing over 11.3
- 5) Sex linked Inheritance 11.4
- 6) Sex Determination 11.5
- 7) Mendelian disorders 11.6
- 8) Summary

August

2015 Chp 16 Excretion and Osmoregulation

Submit

- 1) Introduction
- 2) Modes of Excretion 16.1
- 3) Human Excretory system16.2
- 4) Composition & formation of urine16.3
- 5) Role of kidney in osmoregulation 16.4
- 6) Kidney Failure ,Dialysis and kidney stone , Transplantation 16.5
- 7) Summary

Chp.14 Animal Husbandry

Submits

- 1) Introduction
- 2) Management of farms and farm animals 14.1
- 3) Dairy 14.2
- 4) Poultry 14.3
- 5) Animal Breeding 14.4
- 6) Bee Keeping 14.5
- 7) Fisheries 14.6
- 8) Sericulture 14.7
- 9) Lac culture 14.8
- 10) Summary

September

2015 Chp.10 Origin and Evolution of life

Submits

- 1) Origin of life 10.1
- 2) Organic Evolution 10.2
- 3) Origin & Evolution of human being 10.3
- 4) Summary

September

2015 Chp.19 Organism & Environment II

Submits

- 1) Population and ecological adaptation 19.1
- 2) Population interaction: Competition, Mutualism, Parasitism, Predation 19.2
- 3) Population attributes: Growth rate, birth rate, death, age structure 19.3
- 4) Biodiversity and its conservation:- Concept, importance loss, conservation & hot spots. Endangered species, Extinction, Red data book, Biosphere reserves, national parks and sanctuaries 19.4
- 5) Environmental issues: Air and water pollution and its control, radioactive waste management, case study 19.5
- 6) Summary

October

2015 Chp.13 Human Health & Diseases

Submits

- 1) Introduction
- 2) Concepts of Immunology :Types of Immunity 13.1
- 3) Structures of Antigen-Antibody Complex, Antigen on Blood cells 13.2
- 4) Pathogens & Parasites 13.3
- 5) Cancer & AIDS 13.4
- 6) Adolescence,Drug & Alcohol abuse 13.5
- 7) Summary

November

2015 I Sem Exam

December

2015 Chp.17 Control & Co.ordination

Submits

- 1) Introduction
- 2) Structure and function of brain and spinal cord 17.1
- 3) PNS & ANS 17.2
- 4) Transmission of nerve Impulse 17.3
- 5) Reflex Action 17.4
- 6) Sensory receptors: Eye & Ear 17.5
- 7) Endocrine glands and their hormones 17.6
- 8) Hypothalamus 17.7
- 9) Hormones as messenger and regulators 17.8
- 10) Summary

ENGLISH

	PROSE AND POEM	RAPID READING	GRAMMER	WRITING SKILL
1 UNIT	1.1 The Person I Am Looking For 1.2 A Two Billion Dollar Dream 1.3 The Turning Point of My Life 1.4 To Be Something Remain A Nobody	1The Daisy	Articles ,Prepostion, Tenses, Modal Auxiliary, Direct-Indirect Speech transformatio n of Sentences	Letter Writing, Interview Questions
	2.1 I Ran Into A Stranger 2.2 A Buy With A Mission 2.3 One Full , One Half 2.4 Who Was The Happiest of Them All ?			
2 UNIT	3.1 Sububs 3.2 Where Have All Birds Gone 3.3 A Tale For All Cities 3.4Aamchi Mumbai And 'I'	2 The Girl With An Apple 3 Skeleton In The Cupboard	Voice, Use Of TOO And ENOUGH , Infinitive, And Gerunds, IF- Unless, Simple, Compound, complex Sentenses	Note Making, Speech Writing, View-Counter view, Tourist Leaflet, Summary Writing, Appeal, News item, And Dialogue
	4.1 Old Women 4.2 16 Killed In Haridwar Stampede 4.3 A Kawning Divide			
	5.1 The Felling Of The Banyan 5.2 Toward Ideal Villagers 5.3 Under The Yoke 5.4 Realization Of A Dream			
	6.1 A Nation's Strength 6.2 Audience With Anantpai 6.3 Indian's Underclass Gete Upwardly Mobile			
3 UNIT	7.1 Peace Is A Woman And A Mother 7.2What Would it Be Like 7.3 The Animal School A Fable	4 As You Like It 5 No Fear	Degree	Information Transfer, Dialog Writing.
	8.1 Concrele Jungle 8.2 Ecowatch "R" you Read?			

	8.3 World Population :View- Counterview 8.4 Humans ,Be Humane			
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COMPUTER SCIENCE-I

Month: June and July

Topic name :HTML

Content :Introduction to HTML

Advantages and Disadvantages of HTML

Study of tags:-<html>,<head>,<title>,<body>,<P>,<HR>,,,,<Pre>,<Marquee>,,<I>,<U>,<BIG>,<small>,<sub>,<sup>,,<HREF>,<HR>,,<SRC>,<ALT>,<Height>,<Width>,<Align>,<Table>,<Caption>,<TR>,<TH>,<TD>,<VB Script>,<For-next>,<If-Then-Else>,<Msgbox>,<Inbox>,<DIM>,<SET>.

Month: AUGUST

Topic name : Data Structure

Content: Introduction to data structure

Data structures operations.

Algorithms notations

Control structures.

Array-Representation of Memory,Traversing,Inseting,Deleting,Sorting,Binary search ,Pointer array,records in memory using array.

Months:September and October

Operating systems

Contents: What is operating system?

Service of O.S, overview of-windows 98,NT,LINOX

Information Management-Process,Multi programming,context switching, Process states,priority,Multitasking,Time sharing.

Memory Management:- Single user computer, Partitioning Fixed and Variable Partitioning, Paging,Segmentation,Virtual Memory

GUI:-Features of windows, Task List

Access & Security:-Attacks,Threats,Virus & worms.

Month:Nov & Dec

Topic name & contents

C++

Content-Review of C++

Arrays,Pointers,References,Strings,Principals of OOPS

Classes & Objects

Constructor & Destrutors,

Operator overloading

Inheritance

Virtual Functions

Polymorphism

Working with Flies.

First Unit Test- HTML

First semester-html

Operating system

Data Structure

C++

COMPUTER SCIENCE-II

Month: June

Topic name and contents

Introduction to Microprocessors and organisation of 8085

Contents: Evolution of Microprocessor, what is Microprocessor? Block diagram of generic microprocessor, Block diagram of 8085 microprocessor study of various block & function of various pins.

Month: July

Instruction set & programming of 8085

Contents:- Addressing modes in 8085, Programming model of 8085, study of instructions-Data Transfer, Arithmetic, Logic, Branching, Stack, I/O & machine control instructions.

Month:- August

Introduction to Intel X-86 Family

Contents:- Introduction to advanced Microprocessor X-86 family & attributes of X-86 family, Programming model of X-86 family

Month:- September

Introduction to Microcontroller

Contents:- Introduction, study of 8051, 8051 micro controller, application of microcontroller.

Month:- November Technology

Networking Technology

Study of transmission media, cable, coaxial, twisted pair, fiber optic, networks topologies, access methods, bus topologies, Ring, star, Ethernet, token ring, protocols, internet protocols, modem, hub, repeater, Routers.

First unit test-1) Introduction to Microprocessors & organisation of 8085

2) Introduction set & Programming of 8085.

First Semester-1)Introduction to Microprocessor & organisation of 8085

2)Instruction set & programming of 8085.

3)Introduction to Intel X-86 family

4)Introduction to Micro-controller

Preliminary Exams: -

1)Introduction to Micro processor & organisation of 8085

2)Introduction set & Programming of 8085.

3)Introduction to Intel X-86

4)Micro controller

5)Networking Technology.

Chemistry (paper-1)

June-2015

Chemical thermodynamics and energetic

Introduction

- Basic concepts in thermodynamics
 - Types of system
 - Properties of system
 - State & state function
 - Types of processes
- Nature of heat & work
- Internal energy
- First law of thermodynamics
- Second law of thermodynamics
- Enthalpy

Reaction between ΔH and ΔU for chemical reactions

- Enthalpy of physical changes
- Thermochemistry

Enthalpy of chemical reactions

Standard enthalpy of formation

Standard enthalpy of combustion

Bond enthalpy

Hess's law of constant heat summation

- Spontaneous processes(Irrversible process)

Energy and Spontaneity

Entropy

Entropy and Spontaneity

Gibbs energy

Gibbs energy and spontaneity

ΔG & equilibrium constant

- Third law of thermodynamics

July-2015

Chemicals kinetics

- Introduction
- Rate of reaction

Average rate

Instantaneous rate

- Dependence of rate on reactant concentration

Rate laws and rate constant

Order of reaction

Integrated rate laws

Integrated rate laws for first order reactions

Zero order reactions

Pseudo first order of reaction

Experimental determination of rate laws and order

- Molecularity of elementary reactions
- Collision theory and activation energy
- Temperature dependence of reaction rates(Arrhenius Equation)
- Effect of catalyst on rate of reactions concentration

August -2015

Solutions & Colligative properties

- Introduction
- Type of solutions
- Concentration of solution of solid in liquids
- Solubility of gases in liquid
- Solid Solutions
- Colligative properties
- Lowering of vapour pressure
- Elevation of boiling point
- Depression of freezing point
- Osmotic pressure
- Molecular masses and colligative properties
- Abnormal molecular mass
- Vant Hoff factor

September-2015

Solid state

- Introduction
- Classification of solid

Crystalline solids

Amorphous Solids

- Classification of crystalline solids
 - Molecular Solids
 - Polar Molecular Solids

Non polar Molecular solids
Hydrogen bonded Molecular Solids
Ionic Solids
Metallic Solids
Covalent Solids

- Unitcells ,two and three dimensional lattices and number of atom per unit cell
- Packing in solids
- Density of unit cell
- Packing in voids of ionic solids
- Detect in crystal structure
- Electrical properties
- Magnetic properties

October -2015

Electrochemistry

- Introduction
- Redox reaction
- Conductance in electrolytic solution

Conductivity

Molar conductivity

Variation of conductivity with concentration

Variation of molar conductivity with concentration

Kohlrausch law of independent migration of ions

Measurement of conductivity

- Electrochemical cells
- Electrolytic cells

Electrolysis of molten NaCl

Faraday's law of electrolysis

Quantitative aspects of faraday's law of electrolysis

- Galvanic or Voltaic cells

Representation or formulation of galvanic cells

Writing of cell reactions

Daniel cell

Types of electrodes

- Electrode potentials and cell potentials

Standard potentials

Nernst equation

Cell potentials & Gibbs energy change for cell reaction

Standard cell potentials and equilibrium constants

Measurement of cell potentials

- Reference electrodes

Standard hydrogen electrode

Calomel electrode

- Common types of cells

Dry cell

Lead accumulator

- Fuel cells
- Electrochemicals series
- Corrosion

December-2015

(I)General Principles & Processes of isolation

- Introduction
- Concentration
- Oxidation-Reduction
- Refining of crude metal
- Extraction of zinc
- Extraction of iron

- Extraction of aluminum
- Extraction of copper

(II) P-Block Elements

- Introduction
- Group 15 elements

General introduction electronic configuration, occurrence, oxidation states

Trends in physical and chemical properties

Di-nitrogen, preparation, properties and uses

Compounds of nitrogen: NH_3 , HNO_3 , and oxides of nitrogen

Phosphorous-allotropic forms

Compound of phosphorous: -Phosphine, PCl_3 , PCl_5 Ox acids

1) Group 16 elements

General introduction electronic configuration , occurrence, oxidation states

Trends in physical and chemical properties

Dioxygen - Preparation , properties and uses,

classification of oxides , ozones

Compounds of sulphur SO_2 & H_2SO_4

oxoacids of sulphur

2) Group 17 elements

General information

Trends in physical and chemical , Properties

compound of halogens , preparation , properties and uses of chlorine and HCl

Interhalogen compounds

Oxoacids of halogen

3) Group 18 elements

General introduction electronic configuration and occurrence

Trends in physical and chemical properties, uses.

Examination wise Year Plan:2015-2016

I-Unit Test:

- 1) Chemical Thermodynamics and Energetics
- 2) Chemical Kinetics

I-Semester Exam:

- 1) Chemical thermodynamics and Energetics
- 2) Chemical Kinetics
- 3) Solution and colligative properties
- 4) Solid State
- 5) Electrochemisrty

PRELIUMINARY EXAM:

- 1) Chemical thermodynamics and Energetics
- 2) Chemical kinetics
- 3) Solution and colligative properties
- 4) Solid state
- 5) Electrochemistry
- 6) General principles and process of isolation of elements
- 7) P-block elements

Sub: -Chemistry-II

June

4) Halogen derivatives of alkanes and arenes:-

- 1) Introduction
- 2) Classification
- 3) Monohalogen derivatives
- 4) Nomenclature of alkyl halides
- 5) Nature of C-X bond in alkyl halides
- 6) Preparation
- 7) Physical properties & Chemical reactions
- 8) Nucleophilic substitution mechanism
- 9) Haloarenes :Classification & nomenclature
- 10) Nature of C-X bond
- 11) Preparation
- 12) Substitution reaction
- 13) Chemical reaction
- 14) Uses and environmental effects

July

Alcohols, Phenols & Ethers

- 1) Introduction
- 2) Alcohols
- 3) Phenols
- 4) Ethers

August

Aldehydes , Ketones and Carboxylic acids

- 1) Introduction
- 2) Structure of functional group
- 3) Aldehydes and Ketones
- 4) Carboxylic acids

September

Compounds containing Nitrogen

- 1) Nitro compounds Amines Introduction
- 2) Classification of amines
- 3) Nomenclature of amines
- 4) Methods of preparation of amines
- 5) Physical properties and reactions of amines
- 6) Preparation of diazonium salts
- 7) Reactions
- 8) Importance of diazonium salts

September

Polymers

- 1) Introduction
- 2) Classification
- 3) Preparation

October

Chemistry in everyday life

- 1) Introduction
- 2) Classification of drugs
- 3) Chemicals in medicines
- 4) Chemicals in food
- 5) Cleansing agents

October

Biomolecules

- 1) Introduction
- 2) Carbohydrates
- 3) Proteins
- 4) Enzymes, Lipids, Hormones, vitamins, Nucleic acids.

December

D and f-block elements

- 1) Electronic configuration
- 2) Trends in properties
- 3) Preparation ,properties and structure of $K_2Cr_2O_7$ and $KMnO_4$
- 4) Lanthanoid Contraction
- 5) Comparison between Lanthanoids and Actinoids

December

Co-ordination Compounds

- 1) Ligands
- 2) Co-ordination numbers
- 3) IUPAC nomenclature
- 4) Isomerism
- 5) Colours
- 6) Applications

I unit test :-Halogen derivatives of alkanes

II Semester:-

- 1) HDA
- 2) Alcohols , ethers and phenols
- 3) Aldehydes , ketones and carboxylic acids
- 4) Compounds Containing nitrogen
- 5) Polymers
- 6) Chemistry in everyday life
- 7) Biomolecules

Prelims:- All Units.

Year Plan

2015-16

Month	M-I	M-II
June	<ul style="list-style-type: none"> • Logic: <ol style="list-style-type: none"> 1) Logical Connectives, truth table 2) Statement Pattern, Logical Equivalence, Tautology, Contradiction, Contingency Quantifiers, Quantified statement, Duality, Negation of compound statement 3) Application of logic to switching circuits 	<ul style="list-style-type: none"> • Continuity: <ol style="list-style-type: none"> 1) Continuity of a function at a point. 2) Discontinuity of a function 3) Types of Discontinuity 4) Continuity on a domain 5) Continuity in an interval
July	<ul style="list-style-type: none"> • Matrices: <ol style="list-style-type: none"> 1) Elementary Transformation 2) Inverse of matrix 3) Application of matrices • Trigonometric Function <ol style="list-style-type: none"> 1) Trigonometric Equation and its solution 2) Solution of a triangle 3) Inverse trigonometric function 4) Graphs of inverse trigonometric function 5) Properties of inverse trigonometric function 	<ul style="list-style-type: none"> • Differentiation: <ol style="list-style-type: none"> 1) Derivatives of composite and inverse functions 2) Logarithmic Differentiation 3) Derivative of Implicit function and parametric function 4) Higher order derivatives • Application of Derivatives: <ol style="list-style-type: none"> 1) Geometrical and physical meaning of derivative, Derivative as a rate measure 2) Approximation 3) Rolle's Theorem 4) Increasing and Decreasing function 5) Maxima and Minima
August	<ul style="list-style-type: none"> • Pairs of straight lines: <ol style="list-style-type: none"> 1) Combined Equation of two lines 2) Sum & products of slopes 3) General second degree equation in x and y. 	<ul style="list-style-type: none"> • Integration: <ol style="list-style-type: none"> 1) Integration by substitution 2) Integration by parts 3) Integration by Partial fraction 4) Some special Integrals

	<ul style="list-style-type: none"> • Vectors: <ol style="list-style-type: none"> 1) Co linearity, Co planarity 2) Section Formula 3) Scalar Triple Product 4) Application of Vectors to Geometry 	<ul style="list-style-type: none"> • Definite Integrals: <ol style="list-style-type: none"> 1) Definite Integrals as a limit of sum 2) Fundamental theorem of integral calculus 3) Evaluation of D.I by substitution by parts and by partial fraction 4) Properties of definite integrals
September	<ul style="list-style-type: none"> • Three Dimensional Geometry: <ol style="list-style-type: none"> 1) Direction angels, Direction consines, Direction ratios 2) Angel between two lines 	<ul style="list-style-type: none"> • Application of definite Integrals: <ol style="list-style-type: none"> 1) Area under the curve • Differential Equation: <ol style="list-style-type: none"> 1)Order, degree and solution of D E 2)Formation of D E 3)Solution of D E 4)Application of D E
October	<ul style="list-style-type: none"> • Line: <ol style="list-style-type: none"> 1. Vector equation of line 2. Distance of a point from a line 3. Skew lines 	<ul style="list-style-type: none"> • Probability Distribution: <ol style="list-style-type: none"> 1. Types of random variable 2. Probability mass function 3. E(x), V(x), S.D of a discrete random variable. 4. Probability Density function
	<ul style="list-style-type: none"> • Linear Programming Problem: <ol style="list-style-type: none"> 1. Converting business problem into mathematical formulation 2. Solution of L.P.P by graphical method 	
November	-	-
December	<ul style="list-style-type: none"> • Plane: <ol style="list-style-type: none"> 1. Equation of planes 2. Angel between the planes 3. Co planarity of lines 4. Distance of a point from a plane 	<ul style="list-style-type: none"> • Binomial Distribution: <ol style="list-style-type: none"> 1. Condition for B .D 2. Mean and Variance of B .D 3. Normal Distribution 4. Mean and Variance of normal distribution 5. Standard Normal Variable.

First unit test:

Maths I:- Logic, Matrices

Maths II:-Continuity ,Differentiation

First Semester:

Maths I:-

1. Matrix
2. Logic
3. Trigonometric function
4. Pair of straight line
5. Vectors
6. Linear programming problem

Maths II

1. Continuity
2. Differentiation
3. Integration
4. Application of derivative
5. Definite Integrals

Preliminary Exam

Maths I- All chapters

Maths II-All chapters

INFORMATION TECHNOLOGY

JUNE-JULY

TOPIC NAME :- WEB PUBLICATIONS

- 1. HTML Page frames,**
- 2. Image mapping, form & form object**
- 3. Inserting sound and video**
- 4. Use of Unicode & Indian language fonts**
- 5. Cross browser testing.**
- 6. Introduction to CSS, Web server.**

AUGUST

TOPIC NAME :- Cyber law and Ethics

- 1. Moral Ethics and Law Ethics culture and ethics for computer users professionals and business**
- 2. Information services**
- 3. Code and guidelines of ethics**
- 4. Introduction to cyber law & IT Act of India 2000**
- 5. Digital signature , Electronic records, attribution, acknowledgement and dispatch**
- 6. Ten commandments of computing, Security and privacy control,**
- 7. Intellectual property Rights.**

AUGUST

TOPIC NAME :- E-COMMERCE

- 1. Electronic commerce scope and definition**
- 2. Trade cycle Electronics Markets usage advantages and disadvantages of future.**
- 3. Electronic data interchange- definition**

4. **Benefits of EDI, Internet commerce**
5. **E-commerce in Perspective, EDI Security**

SEPTEMBER

TOPIC NAME :- CLIENTSIDE SCRIPTING USING JAVASCRIPT

1. **Difference of client side scripting and serves side scripting.**
2. **Javascript as universal client side scripting language**
3. **The Document Object Model (DOM)**
4. **Javascript events and Even handling**

OCTOBER

TOPIC NAME :- ASP.NET (USING VISUAL BASIC.NET)

1. **Introduction and use of Web applications.**
2. **Introduction to .net framework**
3. **Introduction to ASP.NET**
4. **Introduction to the visual studio 2008/2010 IDE And source view control class Web server controls**
5. **Html Server Control**
6. **Validation Server Control**
7. **Components and Applications**
8. **Introduction to applications**

OCTOBER AND DECEMBER

TOPIC NAME :- DATABASE CONCEPTS AND INTERACTION WITH ASP.NET

1. **Microsoft access table relationship,**
2. **Querys & Query types**
3. **Introduction to Reports,Introduction to SQL & comparison with access**
.
4. **Introduction to data access with ASP,connected data access & disconnected data architecture .**

5. ADO net objects The Access Data Source Control,It properties and use.

Physics section I

JUNE

GRAVITATION

Newton's laws, projection of satellite, periodic time, Keplers law, Binding energy, escape velocity, weightlessness, variation of g with altitude, latitude, depth, communication satellite and uses.

JUNE

(ii) CIRCULAR MOTION

Angular displacement, velocity, acceleration, UCM, $v=wr$, radial, tangential acceleration centripetal, centrifugal force, banking of roads, conical pendulum, vertical circle, kinematical equations for circular motion.

(iii) Rotational Motion:

Introduction, moment of inertia

AUGUST

KE of rotating body, radius of gyration, torque expression, angular momentum and its conservation, rolling motion, theorem of perpendicular and parallel axes.

(iv) OSCILLATIONS:

Periodic motion, linear SHM, differential equation of linear SHM, SHM as projection of UCM, phase of SHM, energy in SHM, composition of two SHMS, simple pendulum, Damped oscillations.

SEPTEMBER

(v) SURFACE TENSION

Molecular theory, surface energy, surface tension, angle of contact, shape of a drop, excess pressure, capillarity, effect of impurity on ST and temperature on ST

(vi) ELASTICITY

Introduction elasticity, plasticity, stress, strain, Hooke's law, Elasticity constants,

Poisson's ratio, behavior of wire under increasing load, applications of elastic behavior, elastic energy.

OCTOBER

(vi) WAVE MOTION

Simple harmonic progressive wave, reflection of transverse and longitudinal waves, change of phase, superposition of sound waves, Quincke's tube, beats, applications, Doppler effect, its applications.

(vii) STATIONARY WAVES

Study of vibrations in finite medium, formation of stationary waves, study of vibrations of air column, free and forced vibrations, resonance, musical instruments.

DECEMBER

(viii) KINETIC THEORY OF GASES AND RADIATIONS

Concepts of ideal gas, assumptions of Kinetic theory, mean free path, root mean square velocity, derivation of pressure, Boyle's law, Maxwell's distribution, degree of freedom, thermodynamics,

law of equilibrium of energy, absorption, reflection, transmission of radiation, emissive power, absorption power, kirchoff's law, stefen's law, Newton's law of cooling, radiation corre

Physics section II

June :

1. Wave Theory of Light

Wave theory , wave front and wave normal, Huygens principles, construction of wave front, reflection , polarization , Brewster's law
Polaroid's , Doppler effect in light.

2. Interference & Diffraction

Interference , condition for steady pattern, young's expt. Analytical Treatment , biprism expt, Diffraction due to single slit Rayleigh's criterion, resolving power of microscope and telescope .Difference between interference and diffraction.

July:

3. Electrostatics

Gauss theorem ,mechanical force unit area, energy per unit volume , dielectrics and polarization, concept of condenser, effect of dielectrics , energy of a charged capacitor series and parallel capacitors, van de Graff generator.

4. Current Electricity

Kirchoff's laws, Wheatstone's network, meter bridge, potentiometer.

August

5. Magnetic effects of electric current

Ampere's law and its application , moving coil galvanometer, Ammeter, Voltmeter, Sensitivity & accuracy of moving coil galvanometer, cyclotron.

6. Magnetism:

Circular current loop as dipole , dipole moment of revolving electron , magnetization & magnetic intensity , diamagnetism, paramagnetism & Ferromagnetism, domain theory , Curie's temperature.

September:

7. Electromagnetic Induction

Law's of EMI , eddy currents , uses, self & mutual induction , displacement currents, transformers, coil rotating in uniform magnetic field, alternating currents reactance & impedance LC oscillations , power in AC with resistors , inductor , capacitor.

8. Electrons & Photons:

Photoelectric effect , E instein's equation , photo electric cell & its application, particle nature of light, the photon.

October

9. Atoms , Molecules & Nucle -1

Geiger- Mardsen expt , Rutherford model ,Bohr model , hydrogen spectrum, composition & size of nucleus, radioactivity, De Broglei's hypothesis, wavelength of electron, Davisson Germer expt.

December

10. Semiconductors

Energy bands in solids , intrinsic of extrinsic semiconductors, P type & N type, P-N junction diode, rectifiers, zener diode as voltage

regulator, photo diode , solar cell, LED, transistor action & its characteristics, switch , oscillators, logic gates.

11. Communication Systems

Elements of system , bandwidth of signals, transmission medium, production & detection of amplitude modulated wave , space communication , propagation of EM waves in atmosphere.

Physics

Section II

I unit test

- 1) Wave theory of light
- 2) Interference of light

II Terminal Exam

- 1) Wave theory of light
- 2) Interference & diffraction
- 3) Electrostatics
- 4) Current Electricity
- 5) Magnetic Effect Of electric current
- 6) Magnetism

PRELIUM EXAM: Full portion(11 lesson)