

MAHARAJA AGRASEN MODEL SCHOOL
MONTHLY SYLLABUS PLAN
SESSION: (2023-2024)
CLASS – XII
ENGLISH CORE(301)

Background

At the secondary stage of English language learning the textual materials and other resources should represent a wide range of learning experience. Literature has always played a significant role in learning language. However, it is felt that pupils should be apprised with contemporary issues, read authentic literature and experiences of people to reflect and build their personality traits. While there is a trend for inclusion of a wider range of contemporary and authentic texts, accessible and culturally appropriate pieces of literature should play a pivotal role at the secondary stage of education. The English class is meant for reading literature from different perspectives and to engage in activities for developing communicative competence, creativity and enrichment of language skills It should not be seen as a place merely to read poems and stories in, but an area of activities to develop the learner's imagination as a major aim of language study, and to equip the learner with communicative skills to perform various language functions through speech and writing.

Objectives

Objectives of the course are to enable learners to:

- build greater confidence and proficiency in oral and written communication**

- **develop the ability and knowledge required in order to engage in independent reflection and inquiry**
- **use appropriate English to communicate in various social settings**
- **equip learners with essential language skills to question and to articulate their point of view**
- **build competence in the different aspects of English**
- **develop sensitivity to, and appreciation of, other varieties of English, like Indian English, and the culture they reflect**
- **enable the learner to access knowledge and information through reference skills (consulting a dictionary / thesaurus, library, internet, etc.)**
- **develop curiosity and creativity through extensive reading**
- **facilitate self-learning to enable them to become independent learners**
- **review, organize and edit their own work and work done by peers**

- **integrate listening and speaking skills in the curriculum.**
- **give a brief oral description of events / incidents of topical interest**
- **retell the contents of authentic audio texts (weather reports, public announcements, simple advertisements, short interviews, etc.)**
- **participate in conversations, discussions, etc., on topics of mutual interest in non-classroom situations**
- **narrate a story which has been depicted pictorially or in any other non-verbal mode**

Learning Outcomes at the Secondary Stage:

The students will be able to-

- a)develop an ability to construct meaning by drawing inferences and relating the texts with previous knowledge.**
- b) develop the ability to express their thoughts effortlessly, confidently and in an organized manner.**

c) write a coherent piece undergoing various stages and processes of writing.

d) develop imagination, creativity and aesthetic sensibility, and appreciation.

e) understand the overarching values embedded in the Indian constitution like equality, social justice, equity, scientific temper; imbibe values and apply.

f) respond to contemporary social concerns like violence against women, protection of environment, etc., think critically about various issues and concerns.

g) use language as a skill for real life purposes.

h) attain a level of proficiency in English language to meet the workplace requirements.

i) recognise and accept diversity in terms of language and culture.

j) be sensitive to people in difficult circumstances, children with special needs, needs of elderly people, etc.

k) realize the uniqueness of Indian culture, heritage and its contribution to world knowledge.

l) develop a global perspective on various issues through literature, ICT, media, etc.

m) develop multilingual competence through using multilingualism as a strategy for learning of languages and subjects.

n) develop grammatical competencies moving from procedural knowledge (from use or meaning) to declarative knowledge

Methods and Techniques

The methodology is based on a multi-skill, activity-based, learner-centered approach. Care is taken to fulfill the functional (communicative), literary (aesthetic) and cultural (sociological) needs of the learner. In this situation, the teacher is the facilitator of learning. She/he presents language items, creating situations which motivates the child to use English for the purposes of communication and expression. Aural-oral teaching and testing is an integral feature of the teaching-learning process. The electronic and print media could be used extensively. A few suggested activities are

- Role play**
- Simulating real life situations**
- Dramatizing and miming**

- Using newspaper clippings
 - Borrowing situations from the world around the learners, from books and from other disciplines
 - Using language games, riddles, puzzles and jokes
- Interpreting pictures / sketches / cartoons
 - Debating and discussing
 - Narrating and discussing stories, anecdotes, etc.
 - Reciting poems
- Working in pairs and groups
 - Using media inputs - computer, television, video cassettes, tapes, software packages

Besides measuring learning outcomes, texts serve the dual purpose of diagnosing mistakes and areas of non-learning. To make evaluation a true index of learners' knowledge, each language skill is to be assessed through a judicious mixture of different types of questions.

1. Reading Section: Reading for comprehension, critical evaluation, inference and analysis are to be tested.

2. Writing Section: All types of short and extended writing tasks will be dealt with.

INTERNAL ASSESSMENT

Listening and Speaking Competencies

Assessment of Listening and Speaking Skills will be for 20 marks

Objectives of Assessment for Listening Skill

To enable learners to-

a) understand a range of genres and contexts of spoken English including academic, personal and social aspects.

b) understand detailed information for a purpose.

c) understand and interpret a range of features of the given context.

d) understand the topic and the main points and also distinguish the main points from the details.

Objectives of Assessment for Speaking Skill

To enable the learners to-

a) express and respond to personal feelings and opinions.

b) present oral reports or summaries; narrate incidents or events.

c) present, adopt different strategies to convey ideas according to purpose, topic and audience, and to frame questions so as to elicit desired response.

d) take part in group discussions, summarize ideas, elicit views of others, express and argue a point of view clearly.

e) participate in spontaneous spoken courses.

The general objectives at this stage are to:

- listen and comprehend live as well as recorded oral presentations on a variety of topics
- develop greater confidence and proficiency in the use of language skills necessary for social and academic purpose to participate in group discussions and interviews, by making short oral presentation on given topics
- perceive the overall meaning and organization of the text (i.e., correlation of the vital portions of the text)
- identify the central/main point and supporting details, etc., to build communicative competence in various lexicons of English
- promote advanced language skills with an aim to develop the skills of reasoning, drawing inferences, etc. through meaningful activities
- translate texts from mother tongue(s) into English and vice versa
- develop ability and acquire knowledge required in order to engage in independent reflection and enquiry

- read and comprehend extended texts (prescribed and non-prescribed) in the following genres: science fiction, drama, poetry, biography, autobiography, travel and sports literature, etc.
- text-based writing (i.e., writing in response to questions or tasks based on prescribed or unseen texts), understanding and responding to lectures, speeches, etc.
- write expository / argumentative essays, explaining or developing a topic, arguing a case, etc, write formal/informal letters and applications for different purposes
- make use of contextual clues to infer meanings of unfamiliar vocabulary
- select, compile and collate information for an oral presentation
- produce unified paragraphs with adequate details and support
- use grammatical structures accurately and appropriately
- write items related to the workplace (minutes, memoranda, notices, summaries, reports etc.
- filling up forms, preparing CV, e-mail messages., making notes from reference materials, recorded talks etc.

The core course should draw upon the language items suggested for class IX-X and delve deeper into their usage and functions. Particular attention may, however, be given to the following areas of grammar:

- The use of passive forms in scientific and innovative writings.
- Convert one kind of sentence/clause into a different kind of structure as well as other items to exemplify stylistic variations in different discourses modal auxiliaries- uses based on semantic considerations.

Prescribed Books:

Flamingo

Vistas

Reference Books:

BBC, All in One

MONTHLY SYLLABUS PLAN

APRIL

FLAMINGO- THE LAST LESSON, MY MOTHER AT SIXTY-SIX, LOST SPRING, AUNT JENNIFER'S TIGERS

WRITING SKILLS- NOTICE, LETTERS TO EDITOR,

READING SKILLS- COMPREHENSION

MAY

FLAMINGO- GOING PLACES ,KEEPING QUIET

VISTAS- THE TIGER KING

WRITING SKILL- ARTICLE

READING SKILLS- COMPREHENSION

JUNE/JULY

FLAMINGO- INDIGO

VISTAS- THE ENEMY,

WRITING SKILL-LETTER TO EDITOR, BUSINESS LETTERS

READING SKILLS-COMPREHENSION AND ASL

AUGUST

FLAMINGO- DEEP WATER, A ROADSIDE STAND

WRITING SKILL- ARTICLE

READING SKILLS- COMPREHENSION AND ASL

SEPTEMBER

FLAMINGO- INTERVIEW

VISTAS- MEMORIES OF CHILDHOOD,

WRITING SKILL -Invitations and replies

ASSESSMENT OF LISTENING AND SPEAKING SKILLS

OCTOBER

FLAMINGO -THE RATTRAP

VISTAS- JOURNEY TO THE END OF THE EARTH

NOVEMBER

FLAMINGO- POETS AND PANCAKES

VISTAS- ON THE FACE OF IT

WRITING SKILL –INVITATIONS AND REPLIES

DECEMBER- PROJECT TERM 2

FLAMINGO- keeping Quiet, A THING OF BEAUTY

VISTAS- THE THIRD LEVEL

WRITING SKILLS-JOB APPLICATIONS

SAMPLE PAPERS

SYLLABUS BREAKUP - EXAM WISE

MONDAY TEST- I

FLAMINGO- THE LAST LESSON, MY MOTHER AT SIXTY-SIX

WRITING SKILL- NOTICE, LETTERS TO EDITOR,

READING SKILL COMPREHENSION

Comprehensive Exam

FLAMINGO- THE LAST LESSON, MY MOTHER AT SIXTY-SIX, Aunt Jennifer's
Tigers , Keeping Quiet

Vistas- Tiger King ,

WRITING SKILL- NOTICE, LETTERS TO EDITOR,

READING SKILL COMPREHENSION

MONDAY TEST 2

FLAMINGO- THE LAST LESSON, MY MOTHER AT SIXTY-SIX,LOST SPRING,THE
TIGER KING

WRITING SKILLS- NOTICE, LETTERS TO EDITOR,

READING SKILLS- COMPREHENSION

TERM 1 EXAMINATION

WHOLE SYLLABUS

MONDAY TEST 3

INDIGO, ON THE FACE OF IT AND INVITATIONS,

PRE BOARD 1-

WHOLE SYLLABUS -TERM 2

PRE BOARD -2

COMPLETE SYLLABUS

MATHEMATICS (041)

Objectives:

The broad objectives of teaching Mathematics at senior school stage intend to help the students:

- to acquire knowledge and critical understanding, particularly by way of motivation and visualization, of basic concepts, terms, principles, symbols and mastery of underlying processes and skills.
- to feel the flow of reasons while proving a result or solving a problem.
- to apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method.
- to develop a positive attitude to think, analyze and articulate logically.
- to develop interest in the subject by participating in related competitions.
- to acquaint students with different aspects of Mathematics used in daily life.
- to develop an interest in students to study Mathematics as a discipline.
- to develop awareness of the need for national integration, protection of the environment, observance of small family norms, removal of social barriers, elimination of gender biases.
- to develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.

Prescribed Books:

- Mathematics Part I- Textbook for Class XII, NCERT Publication
- Mathematics Part II- Textbook for Class XII, NCERT Publication
- Mathematics Exemplar Problem for Class XII, NCERT Publication
- Mathematics Lab Manual for Class XII, NCERT Publication

Reference Book:

- Mathematics Class XII by Dr. R.D. Sharma Part-I & II (Dhanpat Rai Publications Private Limited)

NCERT EBooks:

- Part 1
- Part 2

Unit-wise Weightage:

No.	Units	No. of Periods	Marks
I.	Relations and Functions	17	08
II.	Algebra	35	10
III.	Calculus	57	35
IV.	Vectors and Three - Dimensional Geometry	26	14
V.	Linear Programming	13	05
VI.	Probability	20	08
	Total	168	80
	Internal Assessment		20

MONTH-WISE SYLLABUS BREAK-UP (2023-24)

APRIL & MAY

Chapter 3: Matrices(25 Periods)

Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restricted to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

Chapter 4: Determinants(25 Periods)

Determinant of a square matrix (up to 3 x 3 matrices), minors, cofactors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of systems of linear equations by

examples, solving systems of linear equations in two or three variables (having unique solution) using inverse of a matrix.

Chapter 1: Relations and Functions(15 periods)

Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.

Chapter 2: Inverse Trigonometric Functions(15 periods)

Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions

Maths Activity 1: To demonstrate a function which is one-one but not onto.

Maths Activity 2: To find analytically the limit of a function $f(x)$ at $x = c$ and also to check the continuity of the function at that point.

Maths Activity 3: To understand the concept of decreasing and increasing functions.

JULY

Chapter 5: Continuity and Differentiability(20 periods)

Continuity and differentiability, derivative of composite functions, chain rule, derivative of inverse trigonometric functions, derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.

Chapter 6: Applications of Derivatives(20 periods)

Applications of derivatives: rate of change of quantities, increasing/decreasing functions, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).

Maths Activity 4: To understand the concepts of absolute maximum and minimum values of a function in a given closed interval through its graph.

Maths Activity 5: To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.

AUGUST

Chapter 7: Integrals(20 periods)

Integration as an inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.

Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

Chapter 12: Linear Programming(10 periods)

Introduction, related terminology such as constraints, objective function, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

Maths Activity 6: To verify geometrically that $\vec{c} \times (\vec{a} + \vec{b}) = \vec{c} \times \vec{a} + \vec{c} \times \vec{b}$ where $\vec{a}, \vec{b}, \vec{c}$ are vectors.

SEPTEMBER

Chapter 8: Applications of the Integrals(15 Periods)

Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only)

OCTOBER

Chapter 9: Differential Equations(15 periods)

Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type

$$\frac{dy}{dx} + Py = Q, \text{ where } p \text{ and } q \text{ are only functions of } x \text{ or constants}$$

$$\frac{dx}{dy} + Px = Q, \text{ where } p \text{ and } q \text{ are only functions of } y \text{ or constants}$$

Maths Activity 7: To locate the points to given coordinates in space, measure the distance between two points in space and then to verify the distance using distance formula.

Maths Activity 8: To demonstrate the equation of a plane in normal form.

Maths Activity 9: To measure the shortest distance between two skew lines and verify it analytically.

NOVEMBER

Chapter 10: Vectors(15 Periods)

Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a 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. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors

Chapter 11: Three - Dimensional Geometry (15 periods)

Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines

Maths Activity 10: To explain the computation of conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice.

DECEMBER & JANUARY

Chapter 13: Probability(20 periods)

Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of a random variable.

Exam wise Break up

Periodic Test 1:

- Chapter 3: Matrices
- Chapter 4: Determinants

Comprehensive Exam

- Chapter 1: Relations and Functions
- Chapter 2: Inverse Trigonometric Functions
- Chapter 3: Matrices
- Chapter 4: Determinants
- Chapter 5: Continuity and Differentiability

Periodic Test 2:

- Chapter 5: Continuity and Differentiability
- Chapter 6: Application of Derivatives

Mid Term Exam:

- Chapters 1, 2, 3, 4, 5, 6, 7, 12

Periodic Test 3:

- Chapter 8: Application of Integrals
- Chapter 9: Differential Equations

Pre-Board 1: Chapters 1 to 12

Pre-Board 2: Whole Syllabus

PHYSICS (042)

Learning Outcomes

- 1) Recognises the concepts of Physics related to various natural phenomena; such as, electrostatic force; electric and magnetic fields and flux; electrostatic potential; drift of electrons; electric current; resistance of materials; magnetic properties of materials; electromagnetic induction; reflection, refraction, interference, diffraction and polarization of light; formation of rainbow; radioactivity; nuclear fusion and nuclear fission.
- 2) Differentiates between certain physical quantities; such as, between electric field and electric potential; electrical resistance and resistivity; potential difference and emf of a cell; interference and diffraction; wave and particle nature of light; half-life and average life; Nuclear fusion and nuclear fission; conductors and bad conductors or dielectrics.
- 3) Uses International system of units (SI Units), symbols, nomenclature of physical quantities and formulations, conventions; such as, coulomb (C), farad (F), ampere (A), ohm (Ω), tesla (T).
- 4) Explains processes, phenomena and laws with the understanding of the relationship between nature and matter on scientific basis; such as, force between charges, electric field and potential due to charges; force on charges in an electric field; forces on moving charges in a magnetic field, torque on a rectangular current loop in an uniform magnetic field; eddy currents; formation of secondary rainbow; red shift and blue shift in Doppler effect; energy produced due to fusion, generation of emf by solar radiation.
- 5) Derives formulae and equations, such as, electrostatic forces and fields, potential energy of system of charges; torque on a dipole in uniform electric field; effective capacitance of combination of capacitors in series and in parallel; energy stored in a capacitor; magnetic field on the axis of a circular current loop; resonant frequency in series LCR circuit; thin lens formula, de Broglie wavelength; equations for nuclear fission and fusion, beta decay, mass defect; fringe width in Young's double slit experiment.
- 6) Analyses and interprets data, graphs, and figures, and draws conclusion; such as, field due to a uniformly charged thin spherical shell is zero at all inside the shell; hysteresis loop; direction of induced current in the figure; position of image in ray diagrams; fringe pattern due to diffraction at single slit; V-I characteristics of a p-n junction diode; effect of potential on photoelectric current and effect of frequency of incident radiation on stopping potential for a

given photosensitive material; plot of binding energy per nucleon versus mass number; logic gates.

7) Handles tools and laboratory apparatus properly; measures physical quantities using appropriate apparatus, instruments, and devices; such as, an electroscope to detect charge on a body; power supplies; voltmeter; ammeter; multimeter; rheostat; galvanometer; meter bridge; potentiometer; sonometer; traveling microscope; concave and convex lens, prism, glass slab.

8) Plans and conducts investigations and experiments to arrive at and verify the facts, principles, phenomena, relationship between physical quantities, or to seek answers to queries on their own; such as, verification of Ohm's law; determining specific resistance of a material; finding frequency of ac mains; designing an automatic traffic signal system using logic gates; study the image formation by points concave and convex lens; designing a voltage regulator circuit using zener diode; determine refractive index of a liquid using a convex lens and a plane mirror; draw I-V characteristics curves of a p-n junction diode.

9) Communicates the findings and conclusions in oral/written/ICT form that shows critical thinking, such as, appropriately conveying the critical angle in internal reflection by drawing ray diagrams to describe it.

10) Exhibits creativity and out-of-the-box thinking in solving challenging physics problems; such as, calculating the required range of variable capacitor of LC circuit of a radio for the radio to be able to tune over a given frequency range of broadcast band; assessing the depth of a pond in clear water using the knowledge of refractive index of water; calculating the energy released in fission or fusion process.

11) Applies concepts of physics in daily life with reasoning while decision-making and solving problems; such as, if a certain capacitance is required in a circuit across a certain potential difference then suggesting a possible arrangement using minimum number of capacitors of given capacity which can withstand a given potential difference; selecting the appropriate wire for doing wiring at home keeping in view all considerations; use of polarized glass in spectacles; connecting LEDs properly in a circuit, using solar cells in circuits.

12) Takes initiative to learn about the newer research, discoveries and inventions in Physics; such as, accelerators, thermistors, electrical properties of materials, India's atomic energy programme; research on the possibility of static electricity charging electronic devices; improving magnetic bottles to keep high energy plasma in fusion under control, researches in the area of optics to increase the resolution power of microscope and telescope.

13) Recognises different processes used in Physics-related industrial and technological applications; such as, using electrostatic shielding in protecting sensitive instruments from

outside electrical influences; use of superconducting magnets for running magnetically levitated superfast trains; applications of optical fibers for transmission of optical signals; use of controlled chain reaction in nuclear.

14) Realizes and appreciates the interface of Physics with other disciplines; such as, with Chemistry as various materials give rise to interesting properties in the presence or absence of electric field, making light sensitive cells using the applications of photoelectric effect; use of atomic and nuclear physics in medicine, use of electromagnetic radiations in communication, use of optical phenomenon in entertainment.

15) Develops a positive scientific attitude, and appreciates the role and impact of Physics and technology towards the improvement of quality of life and human welfare.

16) Exhibits values of honesty, objectivity, respect for life, rational thinking, and freedom from myth and superstitious beliefs while making decisions, etc..

Text Book for the Session: NCERT.

Reference Book: Fundamentals of Physics by S.L Arora.

MONTH WISE SYLLABUS PLAN

April:

Unit1: Electrostatics

Chapter-1: Electric Charges and Fields

Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Chapter–2: Electrostatic Potential and Capacitance

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.

Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, Uniformly Charged infinite plane sheet and uniformly charged thin spherical shell(Field inside and outside the shell).

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.

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.

Chapter–3: Current Electricity

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 nonlinear), electrical energy and power, electrical resistivity and conductivity, temperature dependence of resistance.

Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's laws and simple applications, Wheatstone bridge.

Practicals (Experiment)

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 a meter bridge and hence determine the resistivity.

Activity

- 1.) To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.

May:

Unit III: Magnetic Effects of Current and Magnetism

Chapter–4: Moving Charges and Magnetism

Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application to the current carrying circular loop. Ampere's law and its applications to infinitely long straight wire. Straight and toroidal solenoids (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields

Practicals(Experiment)

3. To verify the laws of combination (series) of resistances using a meter bridge.

OR

To verify the laws of combination (parallel) of resistances using a meter bridge.

- 4.) To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.

Activity

2.)To assemble the components of a given electrical circuit.

July:

Chapter–4: Moving Charges and Magnetism ... contd

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.

Chapter–5: Magnetism and Matter

Bar magnet, bar magnet as an equivalent solenoid (qualitative treatment only), magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis (qualitative treatment only), torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines. Magnetic properties of materials- Para-, dia- and ferro - magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties.

Unit IV: Electromagnetic Induction and Alternating Currents

Chapter–6: Electromagnetic Induction

Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Eddy currents. Self and mutual induction.

Chapter–7: Alternating Current

Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits, AC generator and transformer.

Practicals(Experiment)

5. To find the focal length of a convex mirror, using a convex lens

Activity

3)To study the variation in potential drop with length of a wire for a steady current.

August:

Unit V: Electromagnetic waves

Chapter–8: Electromagnetic Waves

Basic idea of displacement current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.

Unit VI: Optics

Chapter–9: Ray Optics and Optical Instruments

Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism. Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.

Practicals(Experiment)

6. To draw the I-V characteristic curve of a p-n junction in forward bias and reverse bias.

Activity

4.)To study the effect of intensity of light (by varying distance of the source) on an LDR.

September:

Chapter–10: Wave Optics

Wavefront and Huygens principle, reflection and refraction of plane waves at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygens principle. Interference, Young's double slit experiment and expression for fringe width (No derivation final expression only), coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima (qualitative treatment only).

Unit VII: Dual Nature of Radiation and Matter

Chapter–11: Dual Nature of Radiation and Matter

Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Experimental study of photoelectric effect Matter waves-wave nature of particles, de-Broglie relation.

Unit VIII: Atoms and Nuclei

Chapter–12: Atoms

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of n th possible orbit, velocity and energy of electron in n th orbit, hydrogen line spectra (qualitative treatment only).

Practicals(Experiment)

7. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.

Activity

5.)To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.

October:

Chapter–13: Nuclei

Composition and size of nucleus, nuclear force Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.

Unit IX: Electronic Devices

Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits

Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier

Practicals(Experiment)

8. To find the focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$.

Activity

6.)To observe diffraction of light due to a thin slit

Exam wise Break up

Periodic Test I

Unit I Electrostatics

Comprehensive Exam:

1. Unit I Electrostatics
2. Unit II Current Electricity
3. Unit III Magnetic effect of current.

Periodic Test II

Unit III Magnetic effect of current and Unit IV Electromagnetic Induction

Periodic Test III

Unit IV Optics

Mid Term

1. Unit I Electrostatics
2. Unit II Current Electricity
3. Unit III Magnetic effect of current & Magnetism
4. Unit IV Electromagnetic Induction and Alternating current
5. Unit V Electromagnetic Waves
6. Unit VI Optics

Pre-Board

1. Unit I Electrostatics
2. Unit II Current Electricity
3. Unit III Magnetic effect of current & Magnetism
4. Unit IV Electromagnetic Induction and Alternating current
5. Unit V Electromagnetic Waves
6. Unit VI Optics
7. Unit VII Dual Nature of Matter
8. Unit VIII Atoms and Nuclei
9. Unit IX Electronic Devices

SECTION–A

Experiments

1. To determine resistance per cm of a given wire by plotting a graph for potential difference versus current.
2. To find resistance of a given wire using a meter bridge and hence determine the resistivity (specific resistance) of its material.
3. To verify the laws of combination (series) of resistances using a meter bridge.

OR

To verify the laws of combination (parallel) of resistances using a meter bridge.

4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.

SECTION-B

Experiments

1. To find the value of v for different values of u in case of a convex lens and to find the focal length.
2. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
3. To draw the I-V characteristic curve for a p-n junction in forward bias and reverse bias.

- 4.) To find the focal length of a convex mirror, using a convex lens

ACTIVITY SECTION A

1. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
2. To assemble the components of a given electrical circuit.
3. To study the variation in potential drop with length of a wire for a steady current.

ACTIVITY SECTION B

1. To study the effect of intensity of light (by varying distance of the source) on an LDR.
2. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
3. To observe diffraction of light due to a thin slit.

CHEMISTRY (043)

LEARNING OUTCOMES

- Differentiates technical terms /phenomena/ processes, based on properties/ characteristics, such as molecularity and order of a reaction; ionic and electrical conductivity; ideal and non-ideal solutions; amorphous and crystalline solids; DNA and RNA etc.
- classifies materials/ phenomena/ processes, based on, properties/ characteristics such as, crystalline solids on the basis of their properties ;primary, secondary and tertiary alcohols; primary, secondary and tertiary amines; various types of polymers etc.
- plans and conducts projects/ investigations/ experiments/ to arrive at and verify the facts/ principles/ phenomena or to seek answers to queries on their own, such as,
- How many pigments are present in the spinach leaves or rose flower or marigold flower? What will be the amount of oxalate ions in guava fruit at different stages of ripening?
- What are the functional groups present in an organic compound? Whether different samples of milk contain same or different quantity of casein? etc.
- takes appropriate precautionary measures (do's and don'ts) while handling apparatus, chemicals during laboratory work such as use of safety glasses; wearing of laboratory coat; handling chemicals safely and judiciously; handling glass wares; performs reactions with harmful gases in fuming hood; discard or disposal of chemicals and broken glass wares properly etc
- relates processes and phenomena with causes/ effects, such as, the electrical and magnetic properties of solids and their structure;
- physical properties of alcohol, phenol and ethers with their structures; physical and chemical reactions of aldehyde, ketones and carboxylic acids with their structures etc
- explains scientific terms/ factors/ laws/ theories governing processes and phenomena, such as, the terms minerals, ores, roasting, calcification ,refining etc;
- close packing of particles; Henry's law and Raoult's law; preparation, properties and uses of di-oxygen, ozone, chlorine and some important compounds ; allotropic forms of sulphur; properties and characteristics of d-block and f-block elements

- preparation and properties of haloalkanes, haloarenes, alcohols, phenols, ethers, aldehydes, ketones etc; structure of carbohydrate, proteins and nucleic acids; types of polymers and their functions etc.
- derives/ writes expression for equations, such as, integrated rate law for the zero order and first order reactions; Raoult's law; etc.
- analyses and interprets data/ graph/figure, such as interprets graph for
- predicting order of reaction; interprets figure showing effect of catalyst on activation
- energy; analyzes data to explain trends in
- melting points of organic compounds,
- atomic radii of transition elements, ionic radii of lanthanoids etc.
- concentration of solutions;
- Henry's law constant; emf of galvanic cells using Nernst equation; calculates values for standard electrode potential; calculates rate
- constant of a reaction etc. uses scientific conventions, symbols, chemical formulae, chemical equations as per international standards such as, SI units; symbols and names of elements;
- formulae of chemical compounds; chemical equations; electronic configurations of atoms; name the compounds according to IUPAC system etc. measures physical quantities using appropriate apparatus, such as mass of chemical/object using analytical balance; volume of liquid using pipette, burette, volumetric flask, measuring cylinder

TEXT BOOKS

- Chemistry Part -I, Class-XII, Published by NCERT.
- Chemistry Part -II, Class-XII, Published by NCERT.
- <https://ncert.nic.in/textbook.php?lech2=0-7>
- <https://ncert.nic.in/textbook.php?lech1=0-9>
- http://cbseacademic.nic.in/web_material/CurriculumMain22/SrSec/Chemistry_SrSec_2021-22.pdf

REFERENCE BOOKS

- MODERN'S abc of chemistry (Part-I and Part-II) By – Dr. S.P.Jauhar, Modern Publishers
- Pradeep's chemistry (Part-I and Part-II) By – S.C.Kheterpal and S.C.Dhawan
- NCERT Exemplar Class 12 Chemistry

Unit wise Distribution of Marks

CLASS XII (2023-24) (THEORY)

Time : 3 Hours

70 Marks

S.No.	Title	No. of Periods	Marks
1	Solutions	10	7
2	Electrochemistry	12	9
3	Chemical Kinetics	10	7
4	d -and f -Block Elements	12	7
5	Coordination Compounds	12	7
6	Haloalkanes and Haloarenes	10	6
7	Alcohols, Phenols and Ethers	10	6
8	Aldehydes, Ketones and Carboxylic Acids	10	8
9	Amines	10	6
10	Biomolecules	12	7
	Total		70

MONTHLY SYLLABUS PLAN

APRIL

Unit : Haloalkanes and Haloarenes.

Haloalkanes: Nomenclature, nature of C -X bond. physical and chemical properties, mechanism of substitution reactions, optical rotation.

Haloarenes: Nature of C -X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only).Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane,iodoform, freons, DDT.

Unit : 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.

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.

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration.

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.

MAY

Unit : Alcohols, Phenols and Ethers(Contd..)

Unit : Aldehydes, Ketones and Carboxylic Acids

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

JULY

Unit : Aldehydes, Ketones and Carboxylic Acids (Contd..)

Unit : Organic compounds containing Nitrogen

Amines: Nomenclature, classification, structure, methods of preparation ,physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

Cyanides and Isocyanides - will be mentioned at relevant places in text.

PRACTICALS:

Exp:-1-Determination of concentration/ molarity of KMnO_4 solution by titrating it against a standard solution of:

i) Oxalic acid,

ii) Ferrous Ammonium Sulfate

(Students will be required to prepare standard solutions by weighing themselves).

AUGUST

Unit : Solutions

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gasses in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapor pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor.

PRACTICAL:

EXP: Tests for the functional groups present in organic compounds:

Alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (Primary) groups.

Unit : Electrochemistry

Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis. Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis, batteries, fuel cells, corrosion.

SEPTEMBER

Unit : Electrochemistry (contd..)

Unit : Chemical Kinetics

Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration,

temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant,

integrated rate equations and half-life (only for zero and first order reactions), concept of collision theory (elementary idea, no mathematical treatment). Activation energy, Arrhenius equation.

PRACTICAL

EXP:Preparation of one lyophilic and one lyophobic sol

Lyophilic sol - starch

Lyophobic sol - ferric hydroxide

OCTOBER

Unit : "d" and "f" Block Elements

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, ionic radii, color, catalytic property, magnetic properties, interstitial compounds,alloy formation,preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$

Lanthanoids - Electronic configuration, oxidation states,lanthanoid contraction and its consequences.

Actinides - Electronic configuration, oxidation states and comparison with lanthanide.

PRACTICAL

Qualitative analysis

Determination of one cation and one anion in a given salt.

NOVEMBER

Unit : Coordination Compounds

Coordination compounds - Introduction, ligands, coordination number, color, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT

Unit : Biomolecules

Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration,oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose,glycogen); Importance of carbohydrates.

Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary,secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins.

Nucleic Acids: DNA and RNA.

PRACTICAL

Qualitative analysis

Determination of one cation and one anion in a given salt.

DECEMBER

REVISION

EXAM WISE PLAN

PERIODIC TEST-1 - Haloalkanes and Haloarenes

PERIODIC TEST-2

- Alcohols, Phenols and Ethers
- Aldehydes, Ketones and Carboxylic Acids

PERIODIC TEST-3

- Solutions
- Electrochemistry

COMPREHENSIVE EXAMINATION

- Haloalkanes and Haloarenes
- Alcohols, Phenols and Ethers
- Aldehydes, Ketones and Carboxylic Acid

MIDTERM EXAM

- Haloalkanes and Haloarenes
- Alcohols, Phenols and Ethers
- Aldehydes, Ketones and Carboxylic Acid
- Organic compounds containing Nitrogen

PRE BOARD I

Entire syllabus as per CBSE and DOE guidelines

PRE BOARD II

Entire syllabus as per CBSE and DOE guidelines

BIOLOGY (044)

MONTHLY SYLLABUS PLAN CLASS XII SESSION (2023-24)

Learning Outcomes:

- ❖ differentiates organisms, phenomena and processes based on certain characteristics and salient features, such as, reproduction in organisms, reproductive parts of commonly available flowers; autogamy and geitonogamy, cytokinesis in plant and animal cells, innate and acquired immunity, vaccination and immunization, divergent and convergent evolution; homologous and analogous organs; transcription and translation; inbreeding and outbreeding; in-vitro and in-vivo fertilization; genotype and phenotype; etc.
- ❖ relates processes and phenomena with causes and effects, such as, diseases with symptom, production with use of fertilizers, menstruation and hygiene; pregnancy and embryonic development, etc.
- ❖ applies scientific terminology for organisms, processes, and phenomena based on internationally accepted conventions such as, parthenocarpic fruits polyembryony seminiferous tubules, parthenogenesis, pericarp, microsporangia, geitonogamy, albuminous seeds, apomixis, medical termination of pregnancy (MTP); Acquired Immunodeficiency Syndrome (AIDS); mutation; pleiotropy; sex determination; syndrome; plasmid; vectors; genetically modified organisms (GMO); biomass; ecological pyramids; biomagnification, etc.
- ❖ explains efficiently systems, relationships, processes and phenomena, such as; double fertilization, flower is a modified shoot, process of embryonic development in mammals, adaptations in animals living in xeric and hydric conditions, sexually transmitted infections, mendelian and chromosomal disorders, human genome project, replication of retrovirus, population interactions, energy flow in ecosystem, succession of plants, use of DNA fingerprinting in forensic science, process of evolution etc.
- ❖ describes contribution of scientists/researchers all over the world in systematic evolution of concepts, scientific discoveries and inventions in the field of biology based on historical scientific events/ timelines etc; such as; Mendelian genetics to Morgan's work for linkage and recombination, Hershey and Martha Chase's experiment to establish the concept that the DNA is genetic material, Watson and Crick model of DNA, etc
- ❖ makes linkages at the interface of Biology with other disciplines by relating various interdisciplinary concepts such as; using mathematical models of monohybrid and dihybrid cross; pedigree analysis; molecular basis of DNA and RNA, recombinant DNA technology, bioprocess engineering, population growth curve, etc
- ❖ draws labeled diagrams, flow charts, concept maps, graphs, such as, reproductive parts of flowers, decomposition cycle in terrestrial ecosystem, nutrient cycles, male

and female reproductive system of human; ecological pyramids; life cycle of Plasmodium, etc.

- ❖ prepares slides for study the structural intricacies of life forms and structural organizations, such as, staining of nucleic acid by acetocarmine, etc
- ❖ plans and conducts investigations and experiments to arrive at and verify the facts, principles, phenomena, or to seek answers to queries on their own, such as, How many daughter cells are produced at the end of meiosis?, At which stage of follicular development, is ovum released?,

References for the session (2023-2024)

1. N.C.E.R.T- Biology textbook for class XII
2. Xam Idea Biology for class 12 ,Publisher-V.K Global Publications
- 3.<https://ncert.nic.in/textbook.php?lebo1=0-16>
- 4.<https://ncert.nic.in/exemplar-problems.php?ln=>

UNIT WISE MARKS DISTRIBUTION

Time : 3 Hours

MM-70

UNIT	TITLE	MARKS
I	Reproduction	16
II	Genetics and Evolution	20
III	Biology and Human Welfare	12
IV	Biotechnology and its Applications	12
V	Ecology and Environment	10

MONTHLY SYLLABUS PLAN

APRIL

Unit II: Genetics and Evolution

Chapter 4- Principles and Inheritance : Mendelian inheritance; deviations from Mendelism - incomplete dominance, codominance, multiple alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance, Chromosome theory of inheritance; chromosomes and genes; Sex determination - in humans, birds and honey bee; linkage and crossing over; sex linked inheritance - hemophilia, color blindness; Mendelian disorders in humans - thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.

Chapter 5-Molecular basis of inheritance: Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging;

Practicals

1. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

MAY

Chapter 5-Molecular basis of inheritance(contd.)

DNA replication; Central dogma; transcription, genetic code, translation; gene expression and regulation - lac operon; genome and human genome project; DNA fingerprinting.

Practicals

2. Mendelian inheritance using seeds of different color/sizes of any plant.

3. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and color blindness.

Unit IV: Biotechnology and Its Applications

Chapter 9-Principles and processes of biotechnology: Genetic Engineering (Recombinant DNA Technology).

JUNE

INVESTIGATORY PROJECT DISCUSSION

PRACTICAL FILE WORK

JULY

Chapter 10-Application of biotechnology in health and agriculture: Human insulin and vaccine production, gene therapy; genetically modified organisms -Bt crops; transgenic animals; biosafety issues, biopiracy and patents.

UNIT I

Chapter 1- Sexual reproduction in flowering plants: Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; outbreeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes-apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation.

Practicals

- 4.Prepare a temporary mount to observe pollen germination.
- 5.Flowers adapted to pollination by different agencies (wind, insects, birds).
- 6.Pollen germination on stigma through a permanent slide or scanning electron micrograph.

AUGUST

Chapter 2- Human Reproduction: Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis - spermatogenesis and oogenesis; menstrual cycle; fertilization, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).

Chapter 3-Reproductive health: Need for reproductive health and prevention of sexually transmitted diseases (STD); birth control - need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary idea for general awareness).

Unit III: Biology and Human Welfare

Chapter 7- Health and disease: Pathogens; parasites causing human diseases (malaria, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ringworm); Basic concepts of immunology -vaccines; cancer, HIV and AIDS; Adolescence, drug and alcohol abuse, Antibiotics:production and judicious use.

Practicals

- 7.Prepare a temporary mount of onion root tip to study mitosis.
- 8.Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
9. T.S. of blastula through permanent slides (Mammalian).

SEPTEMBER

Chapter 8--Microbes in human welfare: In household food processing, industrial production, sewage treatment, energy generation and as biocontrol agents and biofertilizers.

Unit V: Ecology and Environment

Chapter 11- Organisms and environment: Population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate and death rate, age distribution. (Topics excluded: Organism and its Environment, Major Abiotic Factors, Responses to Abiotic Factors, Adaptations)

Practicals

10. Common disease causing organisms like *Ascaris*, *Entamoeba*, *Plasmodium*, any fungus causing ringworm through permanent slides, models or virtual images or specimens.
11. Comment on symptoms of diseases that they cause.
12. Study the plant population density by quadrat method.
13. Study the plant population frequency by quadrat method.
14. Controlled pollination - emasculation, tagging and bagging.

OCTOBER

Chapter-12: Ecosystem

Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy (Topics excluded: Ecological Succession and Nutrient Cycles).

Practicals

Meiosis in onion bud cell or grasshopper testis through permanent slides.

NOVEMBER

Chapter 13- Biodiversity and its conservation: Concept of biodiversity; patterns of biodiversity; importance of biodiversity; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, national parks and sanctuaries, Ramsar sites.

Practicals

15. Models specimen showing symbiotic association in root nodules of leguminous plants, *Cuscuta* on host, lichens.
16. Flash cards models showing examples of homologous and analogous organs.

DECEMBER

Chapter-6: Evolution

Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution - variation (mutation and

recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy- Weinberg's principle; adaptive radiation; human evolution.

JANUARY

INVESTIGATORY PROJECT DISCUSSION
REVISION

FEBRUARY

PRACTICAL EXAM
REVISION

Exam wise Break up

PERIODIC TEST I

Chapter 4- Principles of Inheritance

Chapter 5- Molecular basis of Inheritance(till DNA as a genetic material)

COMPREHENSIVE EXAM

Chapter 4- Principles of Inheritance

Chapter 5- Molecular basis of Inheritance

Chapter 9- Biotechnology- its Principles and its processes

PERIODIC TEST II

Chapter 10-Application of biotechnology in health and agriculture

Chapter 1- Sexual reproduction in flowering plants

Chapter 2- Human Reproduction

MID-TERM

Chapter 1- Sexual reproduction in flowering plants

Chapter 2- Human Reproduction

Chapter 4- Principles of Inheritance

Chapter 5- Molecular basis of Inheritance

Chapter 9- Biotechnology- its Principles and its processes

Chapter 10-Application of biotechnology in health and agriculture

PERIODIC TEST III

Chapter 3-Reproductive health

Chapter 7- Health and disease
Chapter 9-Microbes in human welfare

PRE BOARD I

Chapter 1- Sexual reproduction in flowering plants
Chapter 2- Human Reproduction
Chapter 3-Reproductive health
Chapter 4- Principles of Inheritance
Chapter 5- Molecular basis of Inheritance
Chapter 7- Health and disease
Chapter 8-Microbes in human welfare
Chapter 9- Biotechnology- its Principles and its processes
Chapter 10-Application of biotechnology in health and agriculture
Chapter 11- Organisms and environment
Chapter-12: Ecosystem
Chapter 13- Biodiversity and its Conservation

PRE BOARD II - Full syllabus

Chapter 1- Sexual reproduction in flowering plants
Chapter 2- Human Reproduction
Chapter 3-Reproductive health
Chapter 4- Principles of Inheritance
Chapter 5- Molecular basis of Inheritance
Chapter 6- Evolution
Chapter 7- Health and disease
Chapter 8-Microbes in human welfare
Chapter 9- Biotechnology- its Principles and its processes
Chapter 10-Application of biotechnology in health and agriculture
Chapter 11- Organisms and environment
Chapter-12: Ecosystem
Chapter 13- Biodiversity and its Conservation

COMPUTER SCIENCE(083)

Learning Outcomes

Student should be able to

- apply the concept of function and recursion.
- create and use Python libraries.
- explain and use the concept of file handling.
- explain the concept of efficiency in algorithms and computing in general.
- use basic data structure: Stacks and Queues.
- explain the basics of computer networks.
- use Database concepts, SQL along with connectivity between Python and SQL.

Distribution of Marks:

Unit No.	Unit Name	Marks	Periods	
			Theory	Practical
I	Computational Thinking and Programming - 2	40	70	50
II	Computer Networks	10	15	---
III	Database Management	20	25	20
	Total	70	110	70

Text Book : Computer Science for Class XI, XII (NCERT) & self notes for the topics not mapped (CBSE & NCERT)

NCERT book <https://ncert.nic.in/textbook.php?lecs1=0-13>

Reference Book : Computer Science with Python for Class XII (Sumita Arora)

MONTH-WISE SYLLABUS BREAK-UP

April - May

Unit I: Computational Thinking and Programming – 2

- Revision of Python topics covered in Class XI. **(NCERT - XI)**
- Chapter 3 (NCERT XII)** Data Structure: Stack, operations on stack (push & pop), implementation of stack using list. Data Structure: Stack, operations on stack (push & pop), implementation of stack using list.
- Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths.
- Chapter 2 (NCERT XII)** Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause,

writing/appending data to a text file using write() and writelines(), reading from a text file using read(), readline() and readlines(), seek and tell methods, manipulation of data in a text file.

July

- CSV file: import csv module, open / close csv file, write into a csv file using csv.writerow() and read from a csv file using csv.reader()
- **Chapter 2 (NCERT XII)** Binary file: basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method, read, write/create, search, append and update operations in a binary file.

August

- **Chapter 2 (NCERT XII)** Binary file: basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method, read, write/create, search, append and update operations in a binary file.
- **(Chapter 7 - NCERT XI)** Functions: types of function (built-in functions, functions defined in module, user defined functions), creating user defined function,

September

- Functions Arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope)

Practical File Completion (Python) & Project Work

October

Unit III: Database Management

- **Chapter 8 (NCERT-XII)** Database concepts: introduction to database concepts and its need , Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key)
- **Chapter 9 (NCERT-XII)** Structured Query Language: introduction, Data Definition Language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints (not null, unique, primary key), create database, use database, show databases, drop database, show tables, create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table, insert, delete, select, operators (mathematical, relational and logical), aliasing, distinct clause, where clause, in, between, order by, meaning of null, is null, is not null, like, update command, delete command, aggregate functions (max, min, avg, sum, count), group by, having clause, joins: cartesian product on two tables, equi-join and natural join

November

- Interface of python with an SQL database: connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using fetchone(), fetchall(), rowcount, creating database connectivity applications

Practical File Completion (SQL & Python connectivity) , Project Completion

Unit II: Computer Networks (Chapter 10,11,12 - NCERT XII)

- Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET)
- Data communication terminologies: concept of communication, components of data communication (sender, receiver, message, communication media, protocols), measuring capacity of communication media (bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching)
- Transmission media: Wired communication media (Twisted pair cable, Coaxial cable, Fiber-optic cable), Wireless media (Radio waves, Microwaves, Infrared waves)
- Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card)
- Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree)
- Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting

December

- Networking Unit (Contd...)

January

Revision

PRACTICAL

S.No	Unit Name	Marks (Total=30)
1	Lab Test:	
	1. Python program (60% logic + 20% documentation + 20% code quality)	8
	2. A stub program with Python SQL connectivity must be provided with blanks (4 blanks) to be filled by the student with the desired SQL query.	4

2	Report file: <ul style="list-style-type: none"> • Minimum 15 Python programs. • SQL Queries – Minimum 5 sets using one table / two tables. • Minimum 4 programs based on Python - SQL connectivity 	7
3	Project (using concepts learnt in Classes 11 and 12)	8
4	Viva voce	3

Examwise Break up

PT-1 - Text File Handling , Data structures , Stack

PT-2 - Revision of Class XI Python concept

Comprehensive Exam : Revision of Class XI python concepts , Data Structure & Stack , Text File Handling

PT -3 : CSV Files , Binary Files

Mid Term : Revision of Class XI, Functions, Text File Handling , Binary File Handling, CSV File Handling , Data Structure (stack)

PreBoard - 1 - Whole Syllabus

PreBoard - 2 - Whole Syllabus

INFORMATICS PRACTICES

Code No. 065

2023-2024

1. Learning Outcomes

At the end of this course, students will be able to:

- Create Series, Data frames and apply various operations.
- Perform aggregation operations, calculate descriptive statistics.
- Visualize data using relevant graphs.
- Design SQL queries using aggregate functions.
- Import/Export data between SQL database and Pandas.
- Learn terminology related to networking and the internet.
- Identify internet security issues and configure browser settings.
- Explain the impact of technology on society including gender and disability issues.

2. Text Book : Informatics Practices, NCERT

Download Link: <https://ncert.nic.in/textbook.php?leip1=ps-7>

3. Distribution of Marks and Periods

Unit No	Unit Name	Marks
1	Data Handling using Pandas and Data Visualization	25
2	Database Query using SQL	25
3	Introduction to Computer Networks	10
4	Societal Impacts	10
	Project	-
	Practical	30
	Total	100

4. Month Wise syllabus (2023-24)

April-May

Unit 3: Introduction to Computer Networks

Introduction to networks, Types of network: PAN, LAN, MAN, WAN. Network Devices: modem, hub, switch, repeater, router, gateway Network Topologies: Star, Bus, Tree, Mesh. Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP. Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website. Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.

Unit 1: Data Handling using Pandas and Data Visualization

Chapter 2: Data Handling using Pandas -I

Introduction to Python libraries- Numpy, Pandas, Matplotlib. Data structures in Pandas - Series and data frames.

Series: Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing and Slicing. Data Frames: creation - from dictionary of Series, list of dictionaries, Text/CSV files; display; iteration; Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels, Boolean Indexing;

Unit 4: Societal Impacts (Chapter 6)

Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS), cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act. E-waste: hazards and management. Awareness about health concerns related to the usage of technology.

July

Importing/Exporting Data between CSV files and Data Frames. *(for practicals only)*
Importing/Exporting Data between MySQL database and Pandas.

Data Visualization Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram Customizing plots: adding label, title, and legend in plots.

August

Project Work The aim of the class project is to create tangible and useful IT applications. The learner may identify a real-world problem by exploring the environment. e.g. Students

can visit shops/business places, communities or other organizations in their localities and enquire about the functioning of the organization, and how data are generated, stored, and managed. The learner can take data stored in csv or database file and analyze using Python libraries and generate appropriate charts to visualize. Learners can use Python libraries of their choice to develop software for their school or any other social good. Learners should be sensitized to avoid plagiarism and violation of copyright issues while working on projects. Teachers should take necessary measures for this. Any resources (data, image etc.) used in the project must be suitably referenced. The project can be done individually or in groups of 2 to 3 students.

September

Unit 4: Societal Impacts Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS), cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act. E-waste: hazards and management. Awareness about health concerns related to the usage of technology.

October

Unit 2: Database Query using SQL

Revision of database concepts and SQL commands covered in class XI Math functions: POWER (), ROUND (), MOD (). Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM (). Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME (). Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*).

November

Unit 2: Database Query using SQL

Querying and manipulating data using Group by, Having, Order by. Working with two tables using equi-join

DECEMBER & JANUARY

Revision of sample papers

5. Distribution of Practical Marks

SN o	Unit Name	Marks
1	Programs using Pandas and Matplotlib	8
2	SQL Queries	7
3	Practical file (minimum of 20 programs based on Pandas, 5 based on Matplotlib and 20 SQL queries must be included)	5
4	Project Work (using concepts learned in class XI and XII)	5
5	Viva-Voce	5
	TOTAL	30

Exam wise Break up

Periodic Test 1:

- **Chapter 5** Computer Network and web
- **Chapter 2** Data Handling using Pandas – I (only Series)

Periodic Test 2:

Chapter 2 Data Handling using Pandas – I

Mid Term Exam:

- Chapter 5: Computer Network and web
- Chapter 2: Data Handling using Pandas – I
- Chapter 4 Plotting Data using Matplotlib

Periodic Test 3:

- **Chapter 1** Querying and SQL Functions

Pre-Board 1: Full syllabus

Pre-Board 2: Full Syllabus

PSYCHOLOGY (037)

MONTHLY SYLLABUS PLAN

Learning Outcomes:

- **Describes the construct of intelligence, theories of intelligence and Indian perspective.**
- **Explains variations in intelligence as entwined in both heredity and environment.**
- **Distinguishes among aptitude, intelligence, and creativity.**
- **Differentiates among aspects of self like self-concept, self-efficacy, self-esteem, and self-regulation, etc.**
- **Explains the theories of personality.**
- **Enumerates various techniques of personality assessment.**
- **Explains the nature, types and sources of stress.**
- **Describes strategies to cope with stress.**
- **Identifies life skills that help people to stay healthy.**
- **States the factors underlying abnormal behavior.**
- **Describes the major psychological disorders—anxiety, obsessive compulsive, trauma- and stressor related, somatic symptom, dissociative, depressive, bipolar, schizophrenia spectrum, psychotic, neurodevelopmental, disruptive, impulse-control and conduct, feeding and eating, and substance-related and addictive disorders.**
- **Enumerates the different types of therapies—psychodynamic, behavior, cognitive, humanistic existential, bio-medical, and alternative.**
- **Explores how people with mental disorders can be rehabilitated.**
- **Explains nature, formation and change of attitudes.**
- **Explains how people interpret the behavior of others and how the presence of others influences our behavior.**
- **Describes the concept of prosocial behavior and factors affecting it.**
- **Examines the nature, types, formation and influences of groups on individual behavior.**
- **Describes the nature of intergroup conflict and examines various conflict resolution strategies.**
- **States the relationship between human beings and the environment.**
- **Interprets the causes and consequences of social problems from a psychological perspective.**
- **Identifies the possible remedies of problems such as poverty, aggression, and health.**

- Explains the significance of developing communication skills, and the nature and process of counseling.
- Enumerates the importance of psychological testing skills in individual assessment.

TEXTBOOKS:

NCERT- Psychology Textbook for class XII

<https://ncert.nic.in/textbook.php?lepy1=0-7>

UNIT-WISE WEIGHTAGE :

Units	Topics	Marks
I	Variations in Psychological Attributes	13
II	Self and Personality	13
III	Meeting Life Challenges	9
IV	Psychological Disorders	12
V	Therapeutic Approaches	9
VI	Attitude and Social Cognition	8
VII	Social Influence and Group Processes	6
	Total	70

MONTH-WISE PLAN OF SYLLABUS:

APRIL & MAY

Chapter-1 Variation in Psychological Attributes

Chapter-2 Self and Personality

Practical File Introduction

Practical-1 RSPM

JUNE - Case Study (Holiday HomeWork)

JULY & AUGUST

Chapter-3 Meeting Life Challenges

Chapter-4 Psychological Disorder

Practical 2 and 3 - MPI and SCAT

SEPTEMBER & OCTOBER

Chapter- 5 Therapeutic Approaches

Chapter-6 Attitude and Social Cognition

Practical 4 and 5- SCQ and AISS

NOVEMBER

Chapter-7 Social Influences and Group Processes

DECEMBER & JANUARY

- Revision of sample papers

PRACTICAL EXAMINATION :

● Practical (Experiments) file	05 Marks
● Case Study File	05 Marks
● Viva Voce (Project and experiments)	05 Marks
● Two experiment (05 marks for conduct of experiment and 10 marks for reporting)	15 Marks
Total	30 Marks

Exam Wise Syllabus Plan

Periodic Test 1:

- Chapter 1: Variation in Psychological Attributes

Periodic Test 2:

- Chapter 2: Self and Personality

Mid Term:

- Chapter 1: Variation in Psychological Attributes
- Chapter 2: Self and Personality
- Chapter 3: Meeting Life Challenges
- Chapter 4: Psychological Disorders

Periodic Test 3:

- Chapter 5: Therapeutic Approach
- Chapter 6: Attitude and Social Cognition

Pre- Boards 1:

- Chapter 1: Variation in Psychological Attributes
- Chapter 2: Self and Personality
- Chapter 1: Variation in Psychological Attributes
- Chapter 2: Self and Personality
- Chapter 3: Meeting Life Challenges
- Chapter 4: Psychological Disorders
- Chapter 5: Therapeutic Approach

- Chapter 6: Attitude and Social Cognition
- Chapter 7: Social Influences and Group Processes

Pre- boards 2 :

- Chapter 1: Variation in Psychological Attributes
- Chapter 2: Self and Personality
- Chapter 1: Variation in Psychological Attributes
- Chapter 2: Self and Personality
- Chapter 3: Meeting Life Challenges
- Chapter 4: Psychological Disorders
- Chapter 5: Therapeutic Approach
- Chapter 6: Attitude and Social Cognition
- Chapter 7: Social Influences and Group Processes

PHYSICAL EDUCATION(048)

MONTH-WISE SYLLABUS PLAN

APRIL

Unit I Management of Sporting Events

- **Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling)**
- **Various Committees & their Responsibilities (pre; during & post)**
- **Fixtures and its Procedures – Knock-Out (Bye & Seeding) & League (Staircase & Cyclic)**
- **Intramural and Extramural – Meaning, Objectives and its Significance**
- **Community Sports – Purpose and benefits**

MAY

Unit II Children & Women in Sports

- **Exercise guidelines of WHO for different age groups**
- **Common postural deformities-knock knees, flat foot, round shoulders, Lordosis, Kyphosis, Scoliosis and bow legs and their respective corrective measures.**
- **Women participation in Sports – Physical, Psychological and Social benefits**
- **Special consideration (menarche and menstrual dysfunction)**
- **Female athlete triad (osteoporosis, amenorrhea, eating disorders)**

JULY

Unit III Yoga as Preventive measure for Lifestyle Disease

- **Obesity: Procedure, Benefits & contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Paschimottasana, Ardha Matsyendrasana, Dhanurasana, Ushtrasana, Surya Bhedana pranayama.**
- **Diabetes: Procedure, Benefits & contraindications for Katichakrasana, Pawanmuktasana, Bhujangasana, Shalabhasana, Dhanurasana, Suptavajrasan, Paschimottanasana, Ardha Matsyendrasana, Mandukasana, Yogmudra, Gomukhasana, Ushtrasana, Kapalbhati**
- **Asthma: Procedure, Benefits & contraindications for Tadasana, Urdhwahastottasana, Uttan Mandukasana, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalbhati, Gomukhasana, Matsyasana, AnulomVilom.**
- **Hypertension: Tadasana, Katichakrasana, Uttanpadasana, Ardha Halasana, Sarla Matyasana, Gomukhasana, Uttan Mandukasana, Vakrasana, Bhujangasana, Makarasana, Shavasana, Nadi-Shodhan Pranayam, Sitlipranayam.**
- **Back Pain and Arthritis: Procedure, Benefits & Contraindications of Tadasana, Urdhawahastootansana, Ardha-Chakrasana, Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujangasana, Gomukhasana, Bhadrasana, Makarasana, Nadi-Shodhana pranayama.**

Unit IV Physical Education & Sports for CWSN (Children with Special Needs - Divyang)

- **Organizations promoting Disability Sports (Special Olympics; Paralympics; Deaflympics);**
- **Concept of Classification and Divisioning in Sports;**
- **Concept of Inclusion in sports, its need, and Implementation;**
- **Advantages of Physical Activities for children with special needs;**
- **Strategies to make Physical Activities assessable for children with special needs**

AUGUST

Unit V Sports & Nutrition

- **Concept of Balanced Diet and Nutrition**
- **Macro and Micro Nutrients: Food sources and functions**
- **Nutritive and Non- Nutritive Components of Diet**
- **Eating for Weight control – A Healthy Weight, The Pitfalls of Dieting, Food Intolerance and Food Myths**
- **Importance of Diet in Sports-Pre, During and Post competition Requirements**

SEPTEMBER

Unit VI Test & Measurement in Sports

- **Fitness Test – SAI Khelo India Fitness Test in school [Age group 5-8 yrs/ class 1-3: BMI, Flamingo Balance Test, Plate Tapping Test; Age group 9-18 yrs/ class 4-12: BMI, 50mt Speed test, 600mt Run/Walk, Sit & Reach flexibility test, Strength Test (Abdominal Partial Curl Up, Push-Ups for boys, Modified Push-Ups for girls)];**
- **Measurement of Cardio-Vascular Fitness – Harvard Step Test – Duration of the Exercise in Seconds $\times 100/5.5 \times$ Pulse count of 1-1.5 Min after Exercise;**
- **Computing Basal Metabolic Rate (BMR);**
- **Rikli & Jones - Senior Citizen Fitness Test - Chair Stand Test for lower body strength, Arm Curl Test for upper body strength, Chair Sit & Reach Test for lower body flexibility, Back Scratch Test for upper body flexibility, Eight Foot Up & Go Test for agility, Six Minute Walk Test for Aerobic Endurance;**
- **Johnsen – Methney Test of Motor Educability (Front Roll, Roll, Jumping Half-Turn, Jumping full-turn)**

Unit VII Physiology & Injuries in Sports

- **Physiological factors determining components of Physical Fitness**

- **Effect of exercise on Muscular System**
- **Effect of exercise on Cardio- Respiratory System**
- **Physiological changes due to aging**
- **Sports injuries: Classification (Soft Tissue Injuries – Abrasion, Contusion, Laceration, Incision, Sprain & Strain; Bone & Joint Injuries - Dislocation, Fractures - GreenStick, Comminuted, Transverse, Oblique & Impacted)**

OCTOBER

Unit VIII Biomechanics & Sports

- **Newton’s Law of Motion & its application in sports.**
- **Types of Levers and their application in Sports.**
- **Equilibrium – Dynamic and Static and Centre of Gravity and its application in sports**
- **Friction and Sports**
- **Projectile in Sports**

NOVEMBER

Unit IX Psychology & Sports

- **Personality; its definition & types (Jung Classification & Big Five Theory);**
- **Motivation, its type & techniques;**
- **Exercise Adherence: Reasons, Benefits & Strategies for Enhancing it;**
- **Meaning, Concept & Types of Aggressions in Sports;**
- **Psychological Attributes in Sports – Self Esteem, Mental Imagery, Self Talk, Goal Setting**

DECEMBER

Unit X Training in Sports

- **Concept of Talent Identification and Talent Development in Sports**
- **Introduction to Sports Training Cycle – Micro, Meso, Macro Cycle.**
- **Types & Methods to Develop – Strength, Endurance, and Speed**
- **Types & Methods to Develop – Flexibility and Coordinative Ability**

EXAM-WISE SYLLABUS BREAK-UP

Periodic Test 1

Unit-1

Periodic Test 2

Unit -2 and 3

Periodic Test 3

Unit- 6 and 7

Midterm Examination

Unit-1,2,3,4 and 5

Pre Board Exam I

Unit- 1 to 9

Pre Board Exam II

Whole syllabus