

<b>SYLLABUS 2022 - 2023</b>	
<b>CLASS</b>	XII
<b>NAME OF THE SUBJECT</b>	ENGLISH
<b>TEXT BOOKS</b>	<b>English Reader - Flamingo NCERT</b> <b>English Supplementary Reader - Vistas NCERT</b>
<b>REFERENCE BOOKS</b>	

**SYLLABUS:**

<b>S. NO.</b>	<b>UNIT / CHAPTER</b>	<b>DISTRIBUTION OF MARKS</b>
1	Reading Skills	20
2	Creative Writing Skills	20
3	Literature Text Books and Supplementary Reading Texts	40
4	Assessment of Listening and Speaking Skills	10
5	Internal Assessment <ul style="list-style-type: none"> <li>• Listening</li> <li>• Speaking</li> <li>• Project Work</li> </ul>	10
	<b>GRAND TOTAL</b>	<b>100</b>

<b>MONTH: MARCH &amp; APRIL 2022</b>		<b>PERCENTAGE OF SYLLABUS COVERED: 30 %</b>
Reader:	L-1 The Last Lesson P -1 My Mother at Sixty-Six L-2 Lost Spring P-3 Keeping Quiet	
Supplementary:	L-1 The Third Level	
Writing Skills:	Notice Writing Letter Writing - To the Editor (giving suggestions or opinions on issues of public interest)	
Reading Skills:	Comprehension Passage (Descriptive/ Factual/ Literary and Case-based)	

<b>MONTH: MAY 2022</b>		<b>PERCENTAGE OF SYLLABUS COVERED: 19 %</b>
Reader:	L-3 Deep Water P-4 A Thing of Beauty	

Supplementary:	L-2 The Tiger King
Writing Skills:	Formal/ Informal- Invitations and Replies Letter Writing - Job Application with Biodata

MONTH: JULY 2022	PERCENTAGE OF SYLLABUS COVERED: 19 %
Reader:	L-4 The Rat Trap L-6 Poets and Pancakes P-5 A Roadside Stand
Supplementary	L-3 Journey to the End of the Earth
Writing Skills:	Article Writing

MONTH: AUGUST 2022	PERCENTAGE OF SYLLABUS COVERED: 15 %
Reader:	L-5 Indigo L-7 The Interview
Supplementary:	L-4 The Enemy
Writing Skills:	Report Writing

MONTH: SEPTEMBER 2022	PERCENTAGE OF SYLLABUS COVERED: 3 %
Supplementary:	L-6 On the Face of It
Revision for Half Yearly Examination	

MONTH: OCTOBER 2022	PERCENTAGE OF SYLLABUS COVERED: 11 %
Reader:	L-8 Going Places
Supplementary:	L-8 Memories of Childhood
Writing:	Letters - revision

MONTH: NOVEMBER 2022	PERCENTAGE OF SYLLABUS COVERED: 3 %
Reader:	P-6 Aunt Jennifer's Tigers
Reading Skills:	Unseen Passages (revision) Revision of Entire Syllabus

--

SYLLABUS 2022 - 2023	
CLASS	XII
NAME OF THE SUBJECT	MATHS
TEXT BOOKS	NCERT Maths Vol. 1 and 2
REFERENCE BOOKS	NCERT Exemplar

**SYLLABUS:**

S. NO.	UNIT / CHAPTER	DISTRIBUTION OF MARKS
1.	Relation & Functions	08
2.	Matrices and Determinants	10
3.	Calculus	35
4.	Vector and 3 - D	14
5.	Linear Programming Problems	05
6.	Probability	08
7.	Internal Assessment	20
	Total	100

MONTH: APRIL 2022	PERCENTAGE OF SYLLABUS COVERED: 14 %
<p><b>Relations and Functions</b> Types of relations: Reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.</p> <p><b>Inverse Trigonometric Functions</b> Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions.</p> <p><b>Matrices</b> Concept, notation, order, equality, types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric matrices. Addition, multiplication and scalar multiplication of matrices, 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 (restrict 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).</p>	

MONTH: MAY 2022	PERCENTAGE OF SYLLABUS COVERED: 14 %
<p><b>Determinant</b> Determinant of a square matrix (up to <math>3 \times 3</math> 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 system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.</p> <p><b>Continuity and Differentiability</b> Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit function.</p>	

--

<b>MONTH: JUNE 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: _____ %</b>

<b>MONTH: JULY 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 21 %</b>
<p><b>Continuity and Differentiability</b> (continued...)</p> <p>Concepts of exponential, logarithmic functions. Derivatives of log and ex. Logarithmic differentiation. Derivative of functions expressed in parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretations.</p> <p><b>Applications of Derivatives</b></p> <p>Applications of derivatives: Rate of change, 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).</p> <p><b>Integrals</b></p> <p>Introduction to integration.</p>	

<b>MONTH: AUGUST 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 18 %</b>
<p><b>Integrals(continued...) (8%)</b></p> <p>Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, only simple integrals of the type – <math>\int \frac{dx}{(x^2 \pm a^2)}</math>, <math>\int \frac{dx}{\sqrt{x^2 + a^2}}</math>, <math>\int \frac{dx}{\sqrt{a^2 - x^2}}</math>, <math>\int \frac{dx}{(ax^2 + bx + c)}</math>, <math>\int \frac{dx}{\sqrt{ax^2 + bx + c}}</math>, <math>\int \frac{(px + q)dx}{(ax^2 + bx + c)}</math>, <math>\int \frac{(px + q)dx}{\sqrt{ax^2 + bx + c}}</math>, <math>\int \sqrt{a^2 + x^2} dx</math>, <math>\int \sqrt{x^2 - a^2} dx</math>, <math>\int \sqrt{ax^2 + bx + c} dx</math>, <math>\int \frac{[(px + q)]}{\sqrt{ax^2 + bx + c}} dx</math> to be evaluated. Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.</p> <p><b>Applications of the Integrals (6%)</b></p> <p>Applications in finding the area under simple curves, especially lines, arcs of circles/parabolas/ellipses (in standard form only)</p> <p><b>Differential Equations (4%)</b></p> <p>Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, homogeneous differential equations of first order and first degree. Solution of Linear Differential equation of both Type.</p>	

--

MONTH: SEPTEMBER 2022	PERCENTAGE OF SYLLABUS COVERED: 10%
<b>Differential Equations(continued...)</b> Solutions of linear differential equation of the type – $dy/dx + Py = Q$ ,where P and Q are functions of x or constant. $dx/dy + Px = Q$ , where P and Q are functions of y or constant.	
<b>Linear Programming</b> Introduction, related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints)	

MONTH: OCTOBER 2022	PERCENTAGE OF SYLLABUS COVERED: 17 %
<b>Vectors</b> Vectors and scalars, magnitude and direction of a vector. Direction cosines/ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of 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. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors.	
<b>Three-dimensional Geometry</b> Direction cosines/ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Angle between two lines.	

MONTH: NOVEMBER 2022	PERCENTAGE OF SYLLABUS COVERED: 10 %
<b>Probability</b> Multiplication theorem on probability. Conditional probability, independent events, total probability, Baye's theorem. Random variable and its probability distribution, mean of random variable.	

<b>SYLLABUS 2022 - 2023</b>	
<b>CLASS</b>	XII
<b>NAME OF THE SUBJECT</b>	Applied Mathematics
<b>TEXT BOOKS</b>	CBSE MATERIAL
<b>REFERENCE BOOKS</b>	ML AGGARWAL

**SYLLABUS:**

S. NO.	UNIT / CHAPTER	DISTRIBUTION OF MARKS
1.	Numbers, Quantification and Numerical Applications	11
2.	Algebra	10
3.	Inferential Statistics	05
4.	Index Numbers and Time-based data	06
5.	Calculus	15
6.	Financial Mathematics	15
7.	Linear Programming	08
8.	Probability	10
	Total	80
	Internal Assessment	20

<b>MONTH: APRIL 2021</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12.5 %</b>
<b>Unit I Numbers, Quantification and Numerical Applications</b> <ul style="list-style-type: none"> <li>• Modulo Arithmetic</li> <li>• Congruence modulo</li> <li>• Allegation and Mixture</li> <li>• Numerical problems on boats and streams; pipes and cistern; races and games</li> <li>• Numerical inequalities</li> </ul>	

<b>MONTH: MAY 2021</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12.5%</b>
<b>Unit II Algebra</b> <ul style="list-style-type: none"> <li>• Matrices and types of matrices</li> <li>• Algebra of matrices</li> <li>• Equality of matrices, transpose of a matrix, Symmetric and skew symmetric matrix</li> <li>• Determinants</li> <li>• Inverse of a matrix</li> <li>• Solving system of simultaneous equations using matrix method and Cramer's</li> </ul> <b>Unit III Calculus</b> <ul style="list-style-type: none"> <li>• Higher Order Derivatives</li> </ul>	

<b>MONTH: JUNE 2021</b>	<b>PERCENTAGE OF SYLLABUS COVERED:</b>

<b>MONTH: JULY 2021</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12 %</b>
<b>UNIT III CALCULUS(CONT.)</b> <ul style="list-style-type: none"> <li>• Application of derivatives</li> <li>• Marginal cost and marginal revenue using derivatives</li> <li>• Increasing/Decreasing functions</li> <li>• Maxima and Minima</li> <li>• Integration</li> <li>• Indefinite integral as family of curves</li> <li>• Definite integrals as area under the curve</li> <li>• Integration of simple algebraic functions (primitive, by substitution, by parts)</li> <li>• Application of Integration (consumer surplus-producer surplus)</li> <li>• </li> </ul>	

<b>MONTH: AUGUST 2021</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 25%</b>
<b>UNIT III CALCULUS(CONT.)</b> <ul style="list-style-type: none"> <li>• Differential equation (definition, order, degree)</li> <li>• Formulating and solving linear differential equation</li> <li>• Application of differential equation (Growth and Decay Model)</li> </ul> <b>Unit IV Probability Distribution</b> <ul style="list-style-type: none"> <li>• Probability Distribution</li> <li>• Mathematical Expectation</li> <li>• Variance</li> <li>• Binomial Distribution</li> <li>• Poisson distribution</li> <li>• Normal distribution</li> </ul>	

<b>MONTH: SEPTEMBER 2021</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 6 %</b>
<b>Unit V Inferential Statistics</b> <ul style="list-style-type: none"> <li>• Population and sample</li> <li>• Parameter and statistics and statistical inferences</li> <li>• t-Test (one sample t-test and two independent groups t-test)</li> </ul>	

<b>MONTH: OCTOBER 2021</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 20%</b>
<b>Unit VI Index numbers and Time-based data</b> <ul style="list-style-type: none"> <li>• Time series, Time series analysis for univariate data</li> <li>• Secular Trend</li> <li>• Methods of measuring Trend using Moving Average and Method of Least Squares</li> </ul> <b>Unit VIII Linear Programming</b> <ul style="list-style-type: none"> <li>• Introduction and related terminologies (constraints, objective function, optimization)</li> <li>• Mathematical formulation of linear programming problems</li> <li>• Different types of linear programming problems (Transportation and assignment problem)</li> <li>• Graphical method of solution for problems in two variables</li> </ul>	



- Feasible and infeasible regions (bounded and unbounded)
- Feasible and infeasible solutions, optimal feasible solutions (up to three nontrivial constraints)

**Unit VII Financial Mathematics**

- Perpetuity, Sinking funds
- Calculation of EMI

**MONTH: NOVEMBER 2021**

**PERCENTAGE OF SYLLABUS COVERED: 12 %**

**Unit VII Financial Mathematics(cont.)**

- Calculation of returns, nominal rate of return, effective rate of interest
- Compound annual growth rate
- Linear method of depreciation

<b>SYLLABUS 2022 - 2023</b>	
<b>CLASS</b>	XII
<b>NAME OF THE SUBJECT</b>	INFORMATICS PRACTICES
<b>TEXT BOOKS</b>	NCERT
<b>REFERENCE BOOKS</b>	SUMITA ARORA DHANPAT RAI PUBLICATION

**SYLLABUS:**

<b>S. NO.</b>	<b>UNIT / CHAPTER</b>	<b>DISTRIBUTION OF MARKS</b>
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

<b>MONTH: APRIL 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12.5 %</b>
<p>Data Handling using Pandas -I            Introduction to Python libraries- 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.</p> <p>Data Frames: creation - from dictionary of Series, list of dictionaries, Text/CSV files; display; iteration; Operations on rows and columns: add, select, delete, rename;</p>	

<b>MONTH: MAY 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 13 %</b>
<p>Head and Tail functions; Indexing using Labels, Boolean Indexing.</p> <p>Importing/Exporting Data between CSV files and Data Frames.</p> <p>Data Visualization            Purpose of plotting; drawing and saving following types of plots using Matplotlib – line Plot.</p>	

<b>MONTH: JUNE 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: _____ %</b>

<b>MONTH: JULY 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 18%</b>
<p>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.</p> <p>Introduction to networks, Types of network: LAN, MAN, WAN. Network Devices: modem, hub, switch, repeater, router, gateway</p>	

<b>MONTH: AUGUST 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 18 %</b>
<p>Network Topologies: Star, Bus, Tree, Mesh. Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP.</p> <p>Database Query using SQL Math functions: POWER (), ROUND (), MOD (). Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM ().</p>	

<b>MONTH: SEPTEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 14 %</b>
<p>Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME ().</p> <p>Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*).</p> <p>Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website.</p>	

<b>MONTH: OCTOBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12 %</b>
<p>Querying and manipulating data using Group by, Having, Order by. E-waste: hazards and management. Awareness about health concerns related to the usage of technology.</p>	

<b>MONTH: NOVEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12.5 %</b>
<p>Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.</p> <p>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.</p>	

--

<b>MONTH: DECEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: ____%</b>
REVISION	

<b>MONTH: JANUARY 2023</b>	<b>PERCENTAGE OF SYLLABUS COVERED: ____%</b>
REVISION	

<b>MONTH: FEBRUARY 2023</b>	<b>PERCENTAGE OF SYLLABUS COVERED: ____ %</b>
Revision	

### **Suggested Practical List**

#### Data Handling

1. Create a panda's series from a dictionary of values and a ndarray
2. Given a Series, print all the elements that are above the 75th percentile.
3. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category and print the total expenditure per category.
4. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions
5. Filter out rows based on different criteria such as duplicate rows.
6. Importing and exporting data between pandas and CSV file

#### Visualization

1. Given the school result data, analyses the performance of the students on different parameters, e.g subject wise or class wise.
2. For the Data frames created above, analyze, and plot appropriate charts with title and legend.
3. Take data of your interest from an open source (e.g. data.gov.in), aggregate and

summarize it. Then plot it using different plotting functions of the Matplotlib library.

#### Data Management

1. Create a student table with the student id, name, and marks as attributes where the student id is the primary key.
2. Insert the details of a new student in the above table.
3. Delete the details of a student in the above table.
4. Use the select command to get the details of the students with marks more than 80.
5. Find the min, max, sum, and average of the marks in a student marks table.
6. Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by.
7. Write a SQL query to order the (student ID, marks) table in descending order of the marks.

SYLLABUS 2022 - 2023	
CLASS	XII
NAME OF THE SUBJECT	PHYSICS
TEXT BOOKS	NCERT
REFERENCE BOOKS	S L ARORA-NEW SIMPLIFIED PHYSICS

S. NO.	UNIT / CHAPTER	DISTRIBUTION OF MARKS
1	<b>Electrostatics</b> <hr/> Chapter–1: Electric Charges and Fields <hr/> Chapter–2: Electrostatic Potential and Capacitance	9
2.	<b>Current Electricity</b> <hr/> Chapter–3: Current Electricity	8
3.	<b>Magnetic Effects of Current and Magnetism</b> <hr/> Chapter–4: Moving Charges and Magnetism <hr/> Chapter–5: Magnetism and Matter	9
4.	<b>Electromagnetic Induction and Alternating Currents</b> <hr/> Chapter–6: Electromagnetic Induction Chapter 7: Alternating currents	9
5	<b>Electromagnetic Waves</b> <hr/> Chapter–8: Electromagnetic Waves <hr/> <b>Optics</b> <hr/> Chapter–9: Ray Optics and Optical Instruments <hr/> Chapter–10: Wave Optics	17
6.	<b>Dual Nature of Radiation and Matter</b> <hr/> Chapter–11: Dual Nature of Radiation and Matter <hr/> <b>Atoms and Nuclei</b> <hr/> Chapter–12: Atoms <hr/> Chapter–13: Nuclei	11

7.	<b>Electronic Devices</b>	7
	Chapter–14: Semiconductor -Electronics: Materials, Devices and Simple Circuits	
	Total marks	70

APRIL –MAY-JUNE-JULY- **PERCENTAGE OF SYLLABUS COVERED: 20%**

Unit I: 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. 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). Chapter–2: Electrostatic Potential and Capacitance 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 polarisation, 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. **(no derivation, formulae only).**

**MONTH: AUGUST 2022**

**PERCENTAGE OF SYLLABUS COVERED: 40%**

Unit II: Current Electricity

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 non-linear), electrical energy and power, electrical resistivity and conductivity, Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors; 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, Wheatstone bridge.

### **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 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. 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

Current loop as a magnetic dipole and its magnetic dipole moment, magnetic dipole moment of a revolving electron, bar magnet as an equivalent solenoid, magnetic field lines; earth's magnetic field and magnetic elements.

<b>MONTH: SEPTEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 15%</b>
<p><b>Unit IV: Electromagnetic Induction and Alternating Currents</b></p> <p>Electromagnetic induction; Faraday's law, induced emf and current; Lenz's Law, Eddy currents. Self and mutual inductance, displacement current.</p> <p>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, wattless current. AC generator and transformer.</p>	
<b>MONTH: OCTOBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 20%</b>
<p><b>Unit V: Electromagnetic waves</b> Displacement current, Electromagnetic waves and their characteristics (qualitative ideas only). Transverse nature of electromagnetic waves. Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses</p> <p><b>Unit VI: Optics</b></p>	



Wave optics: wave front and Huygens' principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygens' principle. Interference, coherent sources, Young's double slit experiment and expression for fringe width. Diffraction due to a single slit, width of central maximum.

Optical instruments: Microscopes, astronomical telescopes (reflecting and refracting). Magnifying powers and resolving power of microscopes and astronomical telescopes.

### **RAY OPTICS**

Ray Optics: Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction and dispersion of light through a prism. Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset.

### **Unit VII: Dual Nature of Matter and Radiation**

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

**MONTH: NOVEMBER 2022**

**PERCENTAGE OF SYLLABUS  
COVERED: 5%**

### **Unit VIII: Atoms & Nuclei**

Chapter–12: Atoms

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.

Chapter–13: Nuclei Composition and size of nucleus Nuclear force Mass-energy relation, mass defect, nuclear fission, nuclear fusion.

### **Unit IX: Electronic Devices**

Semiconductors; semiconductor diode – I-V characteristics in forward and reverse bias, diode as a rectifier.

## PRACTICALS-30 MARKS

Two experiments one from each section	7+7 Marks
Practical record [experiments and activities]	5 Marks
One activity from any section	3 Marks
Investigatory Project	3 Marks
Viva on experiments, activities and project	5 Marks

- 
1. To determine resistivity of two / three wires by plotting a graph between potential difference versus current.
  2. To find resistance of a given wire / standard resistor using metre bridge.

OR

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

OR

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

3. To compare the EMF of two given primary cells using potentiometer.

OR

To determine the internal resistance of given primary cell using potentiometer.

4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
5. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.

OR

To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.

6. To find the frequency of AC mains with a sonometer.

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

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

OR

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

3. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
4. To determine refractive index of a glass slab using a travelling microscope.
5. To find refractive index of a liquid by using convex lens and plane mirror.
6. To draw the I-V characteristic curve for a p-n junction diode in forward bias and reverse bias.

-----

1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
  2. Use of multimeter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order.
  3. To study effect of intensity of light (by varying distance of the source) on an LDR.
  4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
  5. To observe polarization of light using two Polaroids.
  6. To observe diffraction of light due to a thin slit.
  7. To study the nature and size of the image formed by a (i) convex lens, (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
  8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.
-

# SYLLABUS CHEMISTRY -2022-23

## CLASS XII (2022-23) (THEORY)

Time: 3 Hours 70 Marks	S.No.	Title	No. of Periods	Marks
	1	Solutions	15	7
	2	Electrochemistry	18	9
	3	Chemical Kinetics	15	7
	4	d -and f -Block Elements	18	7
	5	Coordination Compounds	18	7
	6	Haloalkanes and Haloarenes	15	6
	7	Alcohols, Phenols and Ethers	14	6
	8	Aldehydes, Ketones and Carboxylic Acids	15	8
	9	Amines	14	6
	10	Biomolecules	18	7
		<b>Total</b>	<b>160</b>	<b>70</b>

### APRIL 2022

#### **Unit X: Haloalkanes and Haloarenes. 15 Periods**

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

**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 XI: Alcohols, Phenols and Ethers 14 Periods**

**Alcohols:** Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol.

**Phenols:** Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

**Ethers:** Nomenclature, methods of preparation, physical and chemical properties, uses.

### **MAY 2022**

#### **Unit XII: Aldehydes, Ketones and Carboxylic Acids 15 Periods**

**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, uses.

**Carboxylic Acids:** Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

### JULY 2022

#### **Unit XIII: Amines 14 Periods**

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

**Diazonium salts:** Preparation, chemical reactions and importance in synthetic organic chemistry.

## **Unit II: Solutions 15 Periods**

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapour 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.

### **AUGUST 2022**

## **Unit III: Electrochemistry 18 Periods**

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 and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.

## **Unit IV: Chemical Kinetics 15 Periods**

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.

### **SEPTEMBER 2022**

## **Unit VIII: d and f Block Elements 18 Periods**

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, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of  $K_2Cr_2O_7$  and  $KMnO_4$ .

### **Lanthanoids –**

Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences.

**Actinoids** - Electronic configuration, oxidation states and comparison with lanthanoids.

### **OCTOBER – 2022**

## **Unit IX: Coordination Compounds 18 Periods**

Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, the importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).

**NOVEMBER 2022**

**Unit XIV: Biomolecules 18 Periods**

**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; enzymes. Hormones - Elementary idea excluding structure.

**Vitamins** - Classification and functions.

**Nucleic Acids:** DNA and RNA.

<b>SYLLABUS 2022 - 2023</b>	
<b>CLASS</b>	XII
<b>NAME OF THE SUBJECT</b>	BIOLOGY
<b>TEXT BOOKS</b>	Biology Textbook for XII (NCERT)
<b>REFERENCE BOOKS</b>	NIL

**SYLLABUS:**

<b>UNIT</b>	<b>TITLE</b>	<b>DISTRIBUTION OF MARKS</b>
VI	Reproduction	16
VII	Genetics and Evolution	20
VIII	Biology and Human Welfare	12
IX	Biotechnology and its Applications	12
X	Ecology and Environment	10
<b>TOTAL</b>		<b>70</b>

<b>MONTH: APRIL 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 10%</b>
<p><b>UNIT VI: REPRODUCTION</b></p> <p><b>Chapter-2: Sexual Reproduction in Flowering Plants</b>            Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; out breeding 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.</p> <p><b>Chapter-3: Human Reproduction</b>            Male reproductive system; microscopic anatomy of testis.</p>	

<b>MONTH: MAY 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 14%</b>
<p><b>UNIT VI: REPRODUCTION (contd.)</b></p> <p><b>Chapter-3: Human Reproduction (contd.)</b>            Female reproductive system; microscopic anatomy of ovary; gametogenesis -spermatogenesis and oogenesis; menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).</p> <p><b>Chapter-4: Reproductive Health</b>            Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); 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).</p>	

<b>MONTH: JULY 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12%</b>
<b>UNIT VII: GENETICS AND EVOLUTION</b>  <b>Chapter-5: Principles of Inheritance and Variation</b> Heredity and variation: Mendelian inheritance; deviations from Mendelism – incomplete dominance, co-dominance, 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 - haemophilia, colour blindness; Mendelian disorders in humans - thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.  <b>Chapter-6: Molecular Basis of Inheritance</b> Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging.	

<b>MONTH: AUGUST 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12%</b>
<b>UNIT VII: GENETICS AND EVOLUTION (contd.)</b>  <b>Chapter-6: Molecular Basis of Inheritance (contd.)</b> DNA replication; Central Dogma; transcription, genetic code, translation; gene expression and regulation - lac operon; Genome, Human and rice genome projects; DNA fingerprinting.  <b>Chapter-7: Evolution</b> Origin of life; biological evolution and evidences for biological evolution (palaeontology, 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.	

<b>MONTH: SEPTEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 28%</b>
<b>UNIT VIII: BIOLOGY AND HUMAN WELFARE</b>  <b>Chapter-8: Human Health and Diseases</b> Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concepts of immunology - vaccines; cancer, HIV and AIDS; Adolescence - drug and alcohol abuse.  <b>Chapter-10: Microbes in Human Welfare</b> Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use.  <b>UNIT IX: BIOTECHNOLOGY AND ITS APPLICATIONS</b>  <b>Chapter-11: Biotechnology - Principles and Processes</b> Genetic Engineering (Recombinant DNA Technology).	



**Chapter-12: Biotechnology and its Applications**

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

**MONTH: OCTOBER 2022****PERCENTAGE OF SYLLABUS COVERED: 15%****UNIT X: ECOLOGY AND ENVIRONMENT****Chapter-13: Organisms and Populations**

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)

**Chapter-14: Ecosystem**

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

**MONTH: NOVEMBER 2022****PERCENTAGE OF SYLLABUS COVERED: 9%****UNIT X: ECOLOGY AND ENVIRONMENT****Chapter-15: Biodiversity and its Conservation**

Biodiversity-Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.

## **PRACTICALS**

### **Recommended Lab Manual:**

Comprehensive Lab Manual in Biology for Class XII, Published by Laxmi Publications

### **Evaluation Scheme - Max. Marks: 30**

<b>Evaluation Scheme</b>	<b>MARKS</b>
One Major experiment (5)	5
One Minor experiment (2 and 3)	4
Slide Preparation (1 and 4)	5
Spotting	7
Practical Record + Viva Voice	4
Investigatory Project and its Viva	5
<b>Total</b>	<b>30</b>

### **A. List of Experiments**

1. Prepare a temporary mount to observe pollen germination.
2. Study the plant population density by quadrat method.
3. Study the plant population frequency by quadrat method.
4. Prepare a temporary mount of onion root tip to study mitosis.
5. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

### **B. Study and observe the following (Spotting):**

1. Flowers adapted to pollination by different agencies (wind, insects, birds).
2. Pollen germination on stigma through a permanent slide or scanning electron micrograph.
3. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
4. Meiosis in onion bud cell or grasshopper testis through permanent slides.
5. T.S. of blastula through permanent slides (Mammalian).
6. Mendelian inheritance using seeds of different colour/sizes of any plant.
7. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour blindness.
8. Controlled pollination - emasculation, tagging and bagging.

9. Common disease causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of diseases that they cause.

10. Models specimen showing symbiotic association in root nodules of leguminous plants, Cuscuta on host, lichens.

11. Flash cards models showing examples of homologous and analogous organs

<b>SYLLABUS 2022 - 2023</b>	
<b>CLASS</b>	XII
<b>NAME OF THE SUBJECT</b>	COMPUTER SCIENCE
<b>TEXT BOOKS</b>	NCERT
<b>REFERENCE BOOKS</b>	SUMITA ARORA ,DHANPAT RAI PUBLICATION

**SYLLABUS:**

S. NO.	UNIT / CHAPTER	DISTRIBUTION OF MARKS
I	Computational Thinking and Programming-2	40
II	Computer Networks	10
III	Database Management	20
	<b>THEORY</b>	<b>70</b>
	<b>PRACTICAL</b>	<b>30</b>
	TOTAL	100

MONTH: APRIL 2022	PERCENTAGE OF SYLLABUS COVERED: 12.5 %
<p>Revision of Python topics covered in Class XI.</p> <p>Functions: types of function (built-in functions, functions defined in module, user defined functions), creating user defined function, arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope)</p> <p>Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths</p> <p>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.</p>	

MONTH: MAY 2022	PERCENTAGE OF SYLLABUS COVERED: 12.5%
<p>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</p> <p>CSV file: import csv module, open / close csv file, write into a csv file using csv.writer() and read from a csv file using csv.reader( )</p> <p>Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET)</p>	

MONTH: JUNE 2022	PERCENTAGE OF SYLLABUS COVERED: _____ %

--

MONTH: JULY 2022	PERCENTAGE OF SYLLABUS COVERED: 17 %
<p>Data Structure: Stack, operations on stack (push &amp; pop), implementation of stack using list.</p> <p>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)</p> <p>Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves)</p> <p>Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card)</p> <p>Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP</p>	

MONTH: AUGUST 2022	PERCENTAGE OF SYLLABUS COVERED: 16 %
<p>Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree)</p> <p>Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting</p> <p>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)</p>	

MONTH: SEPTEMBER 2022	PERCENTAGE OF SYLLABUS COVERED: 15 %
<p>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.</p>	

MONTH: OCTOBER 2022	PERCENTAGE OF SYLLABUS COVERED: 12 %
<p>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.</p>	

MONTH: NOVEMBER 2022	PERCENTAGE OF SYLLABUS COVERED: 15 %
<p>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</p>	

<b>MONTH: DECEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: __%</b>
Revision	

<b>MONTH: JANUARY 2023</b>	<b>PERCENTAGE OF SYLLABUS COVERED: ____ %</b>
Revision	

<b>MONTH: FEBRUARY 2023</b>	<b>PERCENTAGE OF SYLLABUS COVERED: ____ %</b>
Revision	

### **Suggested Practical List:**

#### **Python Programming**

- Read a text file line by line and display each word separated by a #.
- Read a text file and display the number of vowels/consonants/uppercase/lowercase characters in the file.
- Remove all the lines that contain the character 'a' in a file and write it to another file.
- Create a binary file with name and roll number. Search for a given roll number and display the name, if not found display appropriate message.
- Create a binary file with roll number, name and marks. Input a roll number and update the marks.
- Write a random number generator that generates random numbers between 1 and 6 (simulates a dice).
- Write a Python program to implement a stack using list.
- Create a CSV file by entering user-id and password, read and search the password for given use rid.

#### **Database Management**

- Create a student table and insert data. Implement the following SQL commands on the student table:
  - o ALTER table to add new attributes / modify data type / drop attribute
  - o UPDATE table to modify data
  - o ORDER By to display data in ascending / descending order
  - o DELETE to remove tuple(s)
  - o GROUP BY and find the min, max, sum, count and average
- Similar exercise may be framed for other cases.
- Integrate SQL with Python by importing suitable module.

<b>SYLLABUS 2022 - 2023</b>	
<b>CLASS</b>	XII
<b>NAME OF THE SUBJECT</b>	ECONOMICS
<b>TEXT BOOKS</b>	Indian Economic Development, NCERT, Macroeconomics, NCERT
<b>REFERENCE BOOKS</b>	Indian Economic Development (Sandeep Garg), Macroeconomics (Sandeep Garg)

**SYLLABUS:**

Serial No.	Units	Distribution of Marks
<b>Part A</b>	<b>Introductory Macroeconomics</b>	
1	National Income and Related Aggregates	10
2	Money and Banking	6
3	Determination of Income and Employment	12
4	Government Budget and the Economy	6
5	Balance of Payments	6
<b>Part B</b>	<b>Indian Economic Development</b>	
6	Development Experience (1947-90) and Economic Reforms since 1991	12
7	Current Challenges facing Indian Economy	20
8	Development Experience of India – A Comparison with Neighbours	8
	<b>Project Work</b>	20
	<b>Total</b>	100

<b>MONTH: MARCH- APRIL 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12%</b>
<p><b>Unit 2: Money and Banking</b></p> <p>Money - meaning and supply of money - Currency held by the public and net demand deposits held by commercial banks. Money creation by the commercial banking system. Central bank and its functions (example of the Reserve Bank of India): Bank of issue, Govt. Bank, Banker's Bank, Control of Credit through Bank Rate, CRR, SLR, Repo Rate and Reverse Repo Rate, Open Market Operations, Margin requirement</p> <p><b>Unit 4: Government Budget and the Economy</b></p> <p>Government budget - meaning, objectives and components. Classification of receipts - revenue receipts and capital receipts; classification of expenditure – revenue expenditure and capital expenditure. Measures of government deficit - revenue deficit, fiscal deficit, primary deficit their meaning.</p> <p><b>Unit 5: Balance of Payments</b></p> <p>Foreign exchange rate - meaning of fixed and flexible rates and managed floating. Determination of exchange rate in a free market.</p>	

<b>MONTH: MAY 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12%</b>
<p><b>Unit 5: Balance of Payments</b></p> <p>Balance of payments account - meaning and components; balance of payments: Surplus and Deficit.</p> <p><b>Unit 1: National Income and Related Aggregates</b></p> <p>What is Macroeconomics?</p> <p>Basic concepts in macroeconomics: consumption goods, capital goods, final goods, intermediate goods; stocks and flows; gross investment and depreciation. Circular flow of income (two sector model);</p> <p>Methods of calculating National Income - Value Added or Product method, Expenditure method, Income method. Aggregates related to National Income:</p> <p>Gross National Product (GNP), Net National Product (NNP), Gross and Net Domestic Product (GDP and NDP) - at market price, at factor cost; Real and Nominal GDP. GDP and Welfare</p>	



<b>MONTH: JULY 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12%</b>
<b>Unit 3: Determination of Income and Employment</b>  Aggregate demand and its components. Propensity to consume and propensity to save (average and marginal). Short-run equilibrium output; investment multiplier and its mechanism. Meaning of full employment and involuntary unemployment.  Problems of excess demand and deficient demand; measures to correct them - changes in government spending, taxes and money supply.	

<b>MONTH: AUGUST 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 24%</b>
<b>Unit 6: Development Experience (1947-90) and Economic Reforms since 1991:</b>  A brief introduction of the state of Indian economy on the eve of independence. Common goals of Five-Year Plans. Main features, problems and policies of agriculture (institutional aspects and new agricultural strategy, etc.), industry (industrial licensing, etc.) and foreign trade.  <b>Economic Reforms since 1991:</b> Features and appraisals of Liberalization, Globalization and Privatization (LPG policy); Concepts of Demonetization and GST  <b>Unit 7: Current challenges facing Indian Economy</b>  <b>Human Capital Formation :</b> How people become resource ; Role of human capital in economic development ; Growth of Education Sector in India  <b>Rural development:</b> Key issues - credit and marketing - role of cooperatives;  <b>PROJECT WORK</b>	

<b>MONTH: SEPTEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 8%</b>
<b>Unit 7: Current challenges facing Indian Economy</b>  <b>Rural development:</b> agricultural diversification; alternative farming - organic farming	

<b>MONTH: OCTOBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 16%</b>
<b>Unit 7: Current challenges facing Indian Economy</b>  <b>Employment:</b> Growth and changes in workforce participation rate in formal and informal sectors; problems and policies <b>Sustainable Economic Development:</b> Meaning, Effects of Economic Development on Resources and Environment, including global warming.	

<b>MONTH: NOVEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 16%</b>
<b>Unit 8: Development Experience of India</b>  A comparison with neighbours India and Pakistan India and China Issues: economic growth, population, sectoral development and other Human Development Indicators.  <b>PROJECT WORK</b>	

<b>MONTH: DECEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: _____ %</b>
PRE- BOARD	

<b>MONTH: JANUARY 2023</b>	<b>PERCENTAGE OF SYLLABUS COVERED: _____ %</b>
PRACTICALS	

<b>MONTH: FEBRUARY 2023</b>	<b>PERCENTAGE OF SYLLABUS COVERED: _____ %</b>
PRACTICALS	

SYLLABUS 2022 - 2023	
CLASS	XII
NAME OF THE SUBJECT	ACCOUNTANCY
TEXT BOOKS	<b>Accountancy for class XII- NCERT</b> PART1 and 2
REFERENCE BOOKS	<b>1. Accounting for partnership firms – D. K. Goel</b> <b>2. Accounting for company accounts – D.K. Goel</b> <b>3. Analysis of financial statements - D.K. Goel</b>

**SYLLABUS:**

S. NO.	UNIT / CHAPTER	DISTRIBUTION OF MARKS
	Unit 1. Accounting for Partnership Firms	<b>36</b>
	Unit 2. Accounting for Companies	<b>24</b>
	Unit 3. Analysis of Financial Statements	<b>12</b>
	Unit 4. Cash Flow Statement	<b>8</b>
	<b>PROJECT WORK</b>	<b>20</b>
		100

<b>MONTH: APRIL 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 9 %</b>
<p>Accounting for Partnership Firms</p> <p><input type="checkbox"/> Partnership: features, Partnership Deed.</p> <p><input type="checkbox"/> Provisions of the Indian Partnership Act 1932 in the absence of partnership deed.</p> <p><input type="checkbox"/> Fixed v/s fluctuating capital accounts. Preparation of Profit and Loss Appropriation account- division of profit among partners, guarantee of profits.</p> <p><input type="checkbox"/> Past adjustments (relating to interest on capital, interest on drawing, salary and profit sharing ratio).</p> <p><input type="checkbox"/> Goodwill: meaning, nature, factors affecting and methods of valuation - average profit, super profit and capitalization.</p> <p>Change in the Profit Sharing Ratio among the existing partners - sacrificing ratio, gaining ratio, accounting for revaluation of assets and reassessment of liabilities and treatment of reserves, accumulated profits and losses. Preparation of revaluation account and balance sheet.</p> <p>Admission of a partner - effect of admission of a partner on change in the profit sharing ratio, treatment of goodwill (as per AS 26),</p>	

<b>MONTH: MAY 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 12 %</b>

Admission of a partner - effect of admission of a partner on change in the profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities, treatment of reserves, accumulated profits and losses, adjustment of capital accounts and preparation of capital, current account and balance sheet.

☐ Retirement and death of a partner: effect of retirement / death of a partner on change in profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities,

**MONTH: JULY 2022**

**PERCENTAGE OF SYLLABUS COVERED: 15 %**

Retirement and death of a partner:

adjustment of accumulated profits, losses and reserves, adjustment of capital accounts and preparation of capital, current account and balance sheet.

Preparation of loan account of the retiring partner.

☐ Calculation of deceased partner's share of profit till the date of death.

Preparation of deceased partner's capital account and his executor's account.

☐ Dissolution of a partnership firm: meaning of dissolution of partnership and partnership firm, types of dissolution of a firm.

Settlement of accounts - preparation of realization account, and other related accounts: capital accounts of partners and cash/bank a/c (excluding piecemeal distribution, sale to a company and insolvency of partner(s)).

**MONTH: AUGUST 2022**

**PERCENTAGE OF SYLLABUS COVERED: 34 %**

Accounting for Share Capital

☐ Features and types of companies

☐ Share and share capital: nature and types.

☐ Accounting for share capital: issue and allotment of equity and preferences shares.

Public subscription of shares – over subscription and under subscription of shares; issue at par and at premium, calls in advance and arrears (excluding interest), issue of shares for consideration other than cash.

☐ Concept of Private Placement and Employee Stock Option Plan (ESOP), Sweat Equity.

☐ Accounting treatment of forfeiture and reissue of shares.

☐ Disclosure of share capital in the Balance Sheet of a company.

Accounting for Debentures

☐ Debentures: Meaning, types, Issue of debentures at par, at a premium and at a discount. Issue of debentures for consideration other than cash; Issue of debentures with terms of redemption; debentures as collateral security-concept, interest on debentures. Writing off discount / loss on issue of debentures.

PROJECT WORK
--------------

<b>MONTH: SEPTEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 4 %</b>
------------------------------	--

Financial statements of a Company: Meaning, Nature, Uses and importance of financial Statement Statement of Profit and Loss and Balance Sheet in prescribed form with major headings and sub headings (as per Schedule III to the Companies Act, 2013)
---

<b>MONTH: OCTOBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 8 %</b>
----------------------------	--

Financial Statement Analysis: Meaning, Significance Objectives, importance and limitations.
---

<input type="checkbox"/> Tools for Financial Statement Analysis: Cash flow analysis, ratio analysis.
--

<input type="checkbox"/> Accounting Ratios: Meaning, Objectives, Advantages, classification and computation.
--

<input type="checkbox"/> Liquidity Ratios: Current ratio and Quick ratio.
---

<input type="checkbox"/> Solvency Ratios: Debt to Equity Ratio, Total Asset to Debt Ratio, Proprietary Ratio and Interest Coverage Ratio. Debt to Capital Employed Ratio.
---

<input type="checkbox"/> Activity Ratios: Inventory Turnover Ratio, Trade Receivables Turnover Ratio, Trade Payables Turnover Ratio, Fixed Asset Turnover Ratio, Net Asset Turnover Ratio and Working Capital Turnover Ratio.
---

<input type="checkbox"/> Profitability Ratios: Gross Profit Ratio, Operating Ratio, Operating Profit Ratio, Net Profit Ratio and Return on Investment.
--

<b>MONTH: NOVEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 18 %</b>
-----------------------------	---

Meaning, objectives Benefits, Cash and Cash Equivalents, Classification of Activities and preparation (as per AS 3 (Revised) (Indirect Method only) PROJECT WORK
---

<b>MONTH: DECEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: _____ %</b>
-----------------------------	--

REVISION WORK
---------------

<b>MONTH: JANUARY 2023</b>	<b>PERCENTAGE OF SYLLABUS COVERED: _____ %</b>
----------------------------	--

REVISION WORK
---------------

--

<b>MONTH: FEBRUARY 2023</b>	<b>PERCENTAGE OF SYLLABUS COVERED: _____ %</b>
REVISION WORK	

<b>MONTH: MARCH 2023</b>	<b>PERCENTAGE OF SYLLABUS COVERED: _____ %</b>
-----	

<b>SYLLABUS 2022 – 2023</b>	
<b>CLASS</b>	XII
<b>NAME OF THE SUBJECT</b>	BUSINESS STUDIES
<b>TEXT BOOKS</b>	BUSINESS STUDIES (PART 1 AND 2)- NCERT
<b>REFERENCE BOOKS</b>	BUSINESS STUDIES (PART 1 AND 2) – SANDEEP GARG

**SYLLABUS:**

UNITS	NAME OF THE CHAPTERS	DISTRIBUTION OF MARKS
<b>Part A</b>	<b>Principles and Functions of Management</b>	
1.	Nature and Significance of Management	16
2	Principles of Management	
3	Business Environment	
4	Planning	14
5	Organising	
6	Staffing	20
7	Directing	
8	Controlling	
	<b>Total</b>	<b>50</b>
<b>Part B</b>	<b>Business Finance and Marketing</b>	
9	Financial Management	15
10	Financial Markets	
11	Marketing Management	15
12	Consumer Protection	
	<b>Total</b>	<b>30</b>
	<b>Part C: Project Work</b>	<b>20</b>

MONTH: APRIL 2022	PERCENTAGE OF SYLLABUS COVERED:12 %
<b>Part A: Principles and Functions of Management</b> <b>Unit 1: Nature and Significance of Management :</b> <ul style="list-style-type: none"> <li>• Management- concept, objectives and importance.</li> <li>• Management as Science, Art and Profession.</li> <li>• Levels of Management</li> <li>• Management functions- planning, organising, staffing, directing and controlling.</li> <li>• Coordination- concept and importance.</li> </ul> <b>UNIT 2 :Principles of Management :</b> <ul style="list-style-type: none"> <li>• Principles of Management- concept and significance.</li> <li>• Fayol's principles of management.</li> <li>• Taylor's Scientific management- principles and techniques.</li> </ul>	

MONTH: MAY 2022	PERCENTAGE OF SYLLABUS COVERED:21 %
<b>Unit 3: Management and Business Environment :</b> <ul style="list-style-type: none"> <li>• Business Environment- concept and importance.</li> <li>• Dimensions of Business Environment- Economic, Social, Technological, Political and Legal.</li> <li>• <b>Demonetisation – concept and features</b></li> </ul> <b>Unit 4: Planning :</b>	

- Concept, importance and limitations.
- Planning process
- Single use and standing plans. Objectives, Strategy, Policy, Procedure, Method, Rule, Budget and Programme.
- Limitations- internal and external. Meaning of single use and standing plans.

### **Part C Project Work**

<b>MONTH: JULY 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED:13 %</b>
<b>Unit 5: Organising</b> <ul style="list-style-type: none"> <li>• Concept and importance.</li> <li>• Organising Process.</li> <li>• Structure of organization- functional and divisional- concept.</li> <li>• Formal and informal organization concept.</li> <li>• Delegation: concept, elements and importance.</li> <li>• Decentralization: concept and importance.</li> </ul> <b>UNIT 6 : STAFFING</b> <ul style="list-style-type: none"> <li>• Staffing: Concept and importance</li> <li>• Staffing as a part of human resource development</li> <li>• Staffing process</li> <li>• Recruitment process</li> <li>• Selection – process</li> <li>• Training and Development - Concept and importance, Methods of training - on the job and off the job - vestibule training, apprenticeship training and internship training</li> </ul>	

<b>MONTH: AUGUST 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED:25 %</b>
<b>Unit 7: Directing</b> <ul style="list-style-type: none"> <li>• Concept and importance</li> <li>• Elements of Directing</li> </ul> - Supervision- concept, functions of a supervisor. - Motivation- concept, Maslow's hierarchy of needs, Financial and non-financial incentives. - Leadership- concept, styles- authoritative, democratic and laissez faire. - Communication-concept, formal and informal communication, barriers to effective communication, how to overcome the barriers <b>Unit 8: Controlling</b> <ul style="list-style-type: none"> <li>• Concept and importance.</li> <li>• Relationship between planning and controlling</li> <li>• Steps in the process of control</li> </ul> <b>PART B: BUSINESS FINANCE AND MARKETING</b> <b>Unit 9: Financial Management</b> <ul style="list-style-type: none"> <li>• Concept , role and objective of Financial Management.</li> <li>• Financial Decisions: investment, financing and dividend- Meaning and factors affecting.</li> <li>• Financial Planning- concept and importance.</li> </ul>	

<b>MONTH: SEPTEMBER 2022</b>	<b>PERCENTAGE OF SYLLABUS COVERED: 2 %</b>
<b>Unit 9: Financial Management</b> <ul style="list-style-type: none"> <li>• Capital Structure – Concept and factors affecting capital structure</li> <li>• Fixed and Working Capital - Concept and factors affecting their requirements.</li> </ul>	



--

MONTH: OCTOBER 2022	PERCENTAGE OF SYLLABUS COVERED: 22 %
<b>Unit 10: Financial Markets</b> <ul style="list-style-type: none"> <li>Financial Markets: Concept , functions and types.</li> <li>Money market and its instruments.</li> <li>Capital market and its types (primary and secondary), methods of floatation in primary market</li> <li>Stock Exchange – Meaning, Functions and trading procedure</li> <li>Securities and Exchange Board of India (SEBI) - objectives and functions.</li> </ul> <b>UNIT 11 MARKETING</b> <ul style="list-style-type: none"> <li>Marketing – Concept, functions and philosophies -Product, Price and Standard</li> <li>Marketing Mix – Concept and elements</li> <li>Product - branding, labelling and packaging –Concept</li> <li>Price - Concept, Factors determining price</li> <li>Physical Distribution – concept, components, channels of distribution. <ul style="list-style-type: none"> <li>Promotion – Concept and elements; Advertising, Personal Selling, Sales Promotion and Public Relations</li> </ul> </li> </ul>	

MONTH: NOVEMBER 2022	PERCENTAGE OF SYLLABUS COVERED: 5%
<b>Unit 12: Consumer Protection</b> <ul style="list-style-type: none"> <li>Concept and importance of consumer protection.</li> <li>Consumer Protection Act 1986 <ul style="list-style-type: none"> <li>Meaning of consumer and consumer protection</li> <li>Rights and responsibilities of consumers</li> <li>Who can file a complaint and against whom?</li> <li>Redressal machinery.</li> <li>Remedies available.</li> </ul> </li> <li>- Role of consumer organisation and NGO</li> </ul>	

## **WORK EDUCATION**

**2022-23**

1. FUN WITH EXCEL/ SCIENCE GURU
2. MY OWN KITCHEN GARDEN/ INDOOR OXY BOOSTERS
3. WEB DEVELOPMENT
4. CYBER SECURITY (ONLINE RESPONSIBILITY)
5. INTELLUCTUAL PROPERTY RIGHTS/CYBER SAFETY ACTIVITY
6. ADMAD/ LOGO BOUTIQUE
7. FOOD FESTIA
8. PREPARING HAPPINESS BOX FOR OUR HELPERS
9. KAVI SAMMELAN
10. PUPPET MAKERS

## **GENERAL STUDIES**

### **CLASS XII**

#### **July**

#### **CONTEMPORARY PROBLEMS OF INDIAN SOCIETY**

##### **Activity :**

Make group presentations (collage, charts, poster) on the contemporary problems of Indian society by using newspaper clippings as resource.

##### **The objectives of this are to:**

1. Sensitize students about the problems of Indian society.
2. Equip students to deliberate on existing social practices and their manifestations.
3. Make students gain awareness about contemporary socioeconomic problems of the country like illiteracy, poverty, social disharmony, gender and caste discrimination, etc.

#### **August**

**SCIENCE AND SOCIETY** - a debate for the whole class on 'Science - a boon or bane'

Objectives:-

1. To develop a rational attitude and imbibe scientific temper.
2. To promote scientific literacy and dispel myths and superstitions.



# PHYSICAL EDUCATION 2022- 2023

## SYLLABUS CLASS XII

### Game/sport

**APRIL - MAY 2022**

#### 1. ONLINE /OFF LINE INTER HOUSE TUG OF WAR

**2.ONLINE – YOGA** - ASANA -- NAUKASANA, TRIKONASANA,VRIKASANA

ONLINE - AEROBICS

ONLINE – ENDURANCE FITNESS

ONLINE – AGILITY WORKOUT

ONLINE – HIGH INTENSITY WORKOUT

**1 LATEST GENERAL RULES OF THE GAMES/SPORTS (ANY ONE GAME/SPORT OF STUDENTS' CHOICE OFFERED BY THE SCHOOL).**

GAMES
ATHLETIC BASKETBALL, BADMINTON , CRICKET, CHESS, FOOTBALL, ROPE SKIPPING , SWIMMING , TENNIS, TABLE TENNIS, VOLLEY BALL

**JULY 2022**

#### 1.ONLINE/OFFLINE INTER HOUSE CRICKET

**2 .ONLINE –YOGA** DHANURASANA, BHUJANGASANA, VAJRASANA,

ONLINE - AEROBICS

ONLINE – ENDURANCE FITNESS

ONLINE – AGILITY WORKOUT

ONLINE – HIGH INTENSITY WORKOUT

#### ANY ONE FITNESS TEST

PHYSICAL FITNESS TEST	SIT-UPS, MODIFIED PULL UPS, 1,6 KMTS RUN, 20MTS SHUTTLE RUN , SIT & REACH TEST
--------------------------	--

**AUGUST to OCTOBER 2022**

#### 1. ONLINE/ OFF LINE INTER HOUSE VOLLEY BALL

**ONLINE – YOGA ---** NATARAJASANA, HALASANA,

ONLINE - AEROBICS

ONLINE – ENDURANCE FITNESS

ONLINE – AGILITY WORKOUT

ONLINE – HIGH INTENSITY WORKOUT

**2. FUNDAMENTAL SKILLS OF GAME/SPORT (ANY ONE GAME/SPORT OF STUDENT'S CHOICE OFFERED BY THE SCHOOL).**

GAMES
ATHLETIC, BASKETBALL, BADMINTON. CRICKET, CHESS, FOOTBALL, ROPE SKIPPING, SWIMMING, TENNIS& VOLLEY BALL

**NOVEMBER 2022**

#### ONLINE/OFFLINE

**ONLINE – YOGA** - VIRABHADRASANA, TADASANA

ONLINE - AEROBICS

ONLINE – ENDURANCE FITNESS

ONLINE – AGILITY WORKOUT

ONLINE – HIGH INTENSITY WORKOUT

#### ANY ONE FITNESS TEST

PHYSICAL FITNESS TEST	SIT-UPS, MODIFIED PULL UPS, 1,6 KMTS RUN, 20MTS SHUTTLE RUN , SIT & REACH TEST
--------------------------	--

**RELATED SPORT TERMINOLOGY USED IN GAMES**

GAMES
ATHLETIC, BASKETBALL, BADMINTON. CRICKET, CHESS, FOOTBALL, ROPE SKIPPING, SWIMMING, TENNIS& VOLLEY BALL

## **DECEMBER & JANUARY 2022**

### **1. ONLINE/ OFF LINE INTER HOUSE BADMINTON**

### **2. HEALTH AND PHYSICAL ASSESSMENT (HPE)**

### **3. CBSE TOURNAMENTS PRACTICE & MATCHES**

<ul style="list-style-type: none"><li>• GAMES TOURNAMENT</li></ul>
ATHLETIC, BASKETBALL, BADMINTON. CRICKET, CHESS, FOOTBALL, ROPE SKIPPING, SWIMMING, TENNIS& VOLLEY BALL

## **FEBRUARY TO MARCH 2023**

### **1. ONLINE/ OFF LINE INTER HOUSE BASKETBALL**

### **2. ONLINE – YOGA - TRIKONASANA ,VRIKSASANA**

ONLINE - AEROBICS

ONLINE – ENDURANCE FITNESS

ONLINE – AGILITY WORKOUT

ONLINE – HIGH INTENSITY WORKOUT

### **3. RECORDS OF DIFFERENT GAMES**

<ul style="list-style-type: none"><li>• GAMES TOURNAMENT</li></ul>
ATHLETIC, BASKETBALL, BADMINTON. CRICKET, CHESS, FOOTBALL, ROPE SKIPPING, SWIMMING, TENNIS& VOLLEY BALL

### **4. ONE FITNESS TEST**

PHYSICAL FITNESS TEST	SIT-UPS, MODIFIED PULL UPS, 1,6 KMTS RUN, 20MTS SHUTTLE RUN , SIT & REACH TEST
--------------------------	---

