VIDYARTHI VIGYAN MANTHAN 2025-26
SYLLABUS (CLASS - X)

CLASS X

PHYSICS

1. **Light:** Reflection of light by curved surfaces; Images formed by spherical mirrors, centre of curvature, principal axis, principal focus, focal length, mirror formula (Derivation not required), magnification. Refraction; Laws of refraction, refractive index. Refraction of light by spherical lens; Image formed by spherical lenses; Lens formula (Derivation not required); Magnification. Power of a lens. Functioning of a lens in the human eye, defects of vision and their corrections, applications of spherical mirrors and lenses. Refraction of light through a prism, dispersion of light, scattering of light, and applications in daily life (excluding the colour of the sun at sunrise and sunset).

2. **Effects of Current:** Electric current, potential difference and electric current. Ohm's law; Resistance, Resistivity, Factors on which the resistance of a conductor depends. Series combination of resistors, parallel combination of resistors and its applications in daily life. The heating effect of electric current and its applications in daily life. Electric power, Interrelation between P, V, I and R. Magnetic effects of current: Magnetic field, field lines, field due to a current carrying conductor, field due to a current carrying coil or solenoid; Force on current carrying 9 conductor, Fleming's Left Hand Rule, Direct current. Alternating current: frequency of AC. Advantages of AC over DC. Domestic electric circuits.

CHEMISTRY

- Chemical Reactions and Equations
- Acids, Bases and Salts
- Metals and Non–Metals
- Carbon and its Compounds

BIOLOGY

- Life processes in plants and animals: Nutrition; Respiration; Transportation; Excretion; Control and coordination; Reflex action; Movement and growth; Reproduction; Animal hormones
- Heredity and variation
- Human eye structure and function, Defects in vision and their correction
- Our Environment: Ecosystem; Ozone layer depletion; Garbage management

MATHEMATICS

1. **Number Theory:** Divisibility theory in the Integers (The Division Algorithm, the Greatest Common Divisor, The Euclidean Algorithm, The Diophantine Equation, Fundamental Theorem of Arithmetic, Basic properties of congruence, sets theory, De Morgan's law, Ordered pair, Cartesian Product, Relations Linear congruences, Chinese Remainder

Theorem, Fermat's Little Theorem, Wilson's Theorem, Principle of inclusion and exclusion, Pigeon hole principle

2. **Algebra:** Fundamental theorem of Arithmetic, Quadratic Equation, Inequalities, Progressions (A.P, G.P) System of linear equations, Theory of equations, Binomial theorem and properties of binomial coefficients, Polynomials in one and two variables, Cryptarithmetics

3. **Coordinate Geometry:** Area of Triangle, Quadrilateral, Straight Line, Distance, section formula,

4. **Geometry:** Triangle, Circles, Area of Circles, Tangent circle, Alternate segment theorem, Intersecting Secant theorem, Tangent- secant theorem, Ptolemy theorem, Pythagoras theorem, Basic Proportional theorem

5. **Trigonometry:** Trigonometry, Height and distance

6. **Mensuration:** Volume and Surface area of Cube, Cuboid, Cylinder, Cone, Sphere, Hemisphere, 3 D figure including Pyramid and Prism, Frustum of a cone

7. **Probability:** Fundamental principle of counting, Independent and dependent events, Situational and real-life probability problems

LOGIC AND REASONING

Cryptarithmetic/Alphametics, Logical Sequence Series (number, alphabet & image and more), odd one out, Coding-decoding, Blood Relations, Binary Logic, Mathematical Operations, Standard Logical Reasoning Sets, Visual Puzzles, Word Problems, IQ puzzles, Sequencing, Grid Puzzles, Visual Puzzles, Cubes and Dices, Venn Diagrams, Math based reasoning, Direction, Order and Ranking, Clocks & Calender, Analogy, Syllogism, Analytical puzzles, logical Inequalities, Image based sequence(like mirror & water image, rotation, best fit, Odd one out and more), Figure counting, Critical path puzzles, Odd one out, shape constructions, symmetry, number puzzle, Logical Sequence of Words, pattern-based puzzle, Sudoku, Geometrical figures related problem, Input & Output series, Linear and Circular Seating Arrangements, Games and Tournaments, Logical connectives, Math based reasoning, Decision making, meaningful word formation, Paper folding, Figure matrix, spatial visualization, Data Sufficiency.

LIFE STORY OF INDIAN SCIENTIST(S)

Satyendra Nath Bose: Father of Bosons (All Chapters)

INDIAN CONTRIBUTIONS TO SCIENCE

Indian Contributions to Science (All Chapters)

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UNITS AND TOPICS FOR LEVEL-II

IKS-ICS SUPPLEMENTARY READING (INDIAN KNOWLEDGE SYSTEM)

Units		Sub-units (Scope and Limitations)
Unit No.	**Title of the Unit**	**Sub-units included**
1	**IKS and overview of the ICS**	Origins and Evolution of the Indian Knowledge system, Knowledge Production and Propagation in India through ages, Revival of the Indian knowledge systems, Comparison between Indian Knowledge Systems (IKS) and Contemporary Knowledge Systems (CKS)
2	**Astronomy**	Astronomy in the Indian Context, Different measures of time, The *Karaṇa* and *Vākya* systems, Various ancient Indian astronomical *yantras*, Solar and lunar calendars, Various significant eras
3	**Mathematics**	Geometry in Śulbasūtras, Mathematics during India's classical period, The Kerala school of mathematics
4	**Chemistry**	Metallurgical processesin ancient India, Ancient Indian texts - *Rasārṇava* and *Rasaratnasamuccaya*, Various *yantras* for different chemical processes
5	**Agriculture**	Ancient texts on agriculture, Indigenous knowledge and agricultural practices, Rainfall prediction methods
6	**Āyurvēda and Medical Science**	Schools and traditions of Ayurveda, Pharmacological principles in Āyurvēda, Pharmaceutics in Āyurvēda, Properties and usage of the important medicinal Plants.
7	**Environmental conservation**	Importance of flora and fauna in Indian culture, Importance of wildlife and conservation techniques in Hinduism, Jainism, and Buddhism, Animals and plants in ancient sculptures, Conventional, non-conventional and clean energy sources in modern India
8	**Modern Sciences**	Indian space programme and major achievements like INSAT, Chandrayan, Mangalyan, Aditya L1 mission, Gaganyan etc. Indian Contributions in the discovery of gravitational waves, Achievements in atomic energy, Armaments developed by India