

N.C. JINDAL PUBLIC SCHOOL

PUNJABI BAGH, NEW DELHI

ANNUAL CURRICULUM (2026-2027)

| Class : XII | Subject:- PHYSICS | Subject Teacher (Prepared By): NAVIN KUMAR TRIPATHI | | | Designation :P G T |
|---|---|--|-------------------|-----------------|---------------------------|
| Academic Book | Chapter Name | Chapter Topic / Sub Topic | Start Date | End Date | No. of Periods |
| PHYSICS TEXT BOOK NCERT PART - 1 | 1.Electric Charges and Fields | Electric charges, Conservation of charge, Coulomb's law-force between two-point charges, multiple charges, | 1/4/2026 | 4/4/2026 | 3 |
| | | Superposition principle. continuous charge distribution.Electric field, electric field due to a point charge.electric field. Electric field lines. | 6/4/2026 | 4/7/2026 | 2 |
| | | Electric dipole,electric field due to a dipole, torque on a dipole in electric field,Electric flux, statement of Gauss's theorem and applications (sheet, wire and conducting pherical shell) | 8/4/2026 | 10/4/2026 | 3 |
| | | Applications Gauss's theorem(sheet, wire and conducting pherical shell) | 4/13/2026 | 4/18/2026 | 5 |
| | 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 | 20/4/2026 | 30/5/2026 | 6 |
| | | 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 and energy stored | 2/5/2026 | 8/5/202 | 6 |

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| | 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, V-I characteristics (linear and non-linear), | 11/5/2026 | 18/5/2026 | 6 |
| | | electrical energy and power.electrical resistivity and conductivity, temperature dependence of resistance, | 1/7/2026 | 4/7/2026 | 4 |
| | | Internal resistance of a cell, potential difference and emf of a cell,combination of cells in series and in parallel, Kirchhoff's rules, Wheatstone bridge | 6/7/2026 | 10/7/2026 | 5 |
| | 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 solenoid (only qualitative treatment) | 13/7/2026 | 18/7/2026 | 6 |
| | | 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, | 20/7/2026 | 24/7/2026 | 5 |
| | | Current loop as a magnetic dipole and its magnetic dipole moment,moving coil galvanometer, its current sensitivity and conversion to ammeter and voltmeter | 27/7/2026 | 31/7/2026 | 4 |
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| | | Prepared by Name NAVIN KUMAR TRIPATHI | | | |
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| PHYSICS TEXT BOOK NCERT PART -1 | 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), | 1/8/2026 | 2/8/2026 | 2 |
| | | torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines. | 3/8/2026 | 7/8/2026 | 5 |
| | | Magnetic properties of materials- Para-, dia- and ferro - magnetic substances with examples,Magnetization of materials, effect of temperature on magnetic properties. | 10/8/2026 | 14/8/2026 | 5 |
| | 6.Electromagnetic Induction | Electromagnetic Induction,Faraday's laws, induced EMF and current; Lenz's Law , Self and mutual induction. | 17/8/2026 | 21/8/2026 | 5 |
| | 7.Alternating current | Alternating currents, peak and RMS value of alternating current/voltage.reactance and impedance; LCR series circuit (phasors only) | 24/8/2026 | 31/9/2026 | 4 |
| | | resonance, power in AC circuits, power factor, wattless current.AC generator, Transformer. | 1/9/2026 | 5/9/2026 | 4 |

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| | 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. | 29/9/2026 | 30/9/2026 | 2 |
| PHYSICS TEXT BOOK NCERT PART -2 | 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, | 1/10/2026 | 2/10/2026 | 2 |
| | | 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. | 5/10/2026 | 9/10/2026 | 5 |
| | | Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers | 12/10/2026 | 17/10/2026 | 3 |
| | 10. Wave Optics | Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle | 21/10/2026 | 23/10/2026 | 3 |
| | | Interference, Young's double slit experiment, expression for fringe width coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima | 27/10/2026 | 30/10/2026 | 3 |

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| Academic Book | Chapter Name | Chapter Topic / Sub Topic | Start Date | End Date | No. of Periods |
| PHYSICS TEXT BOOK NCERT PART -2 | 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 | 2/11/2026 | 6/11/2026 | 5 |
| | 12.Atoms | Alpha-particle scattering experiment; Rutherford's model of atom.Bohr model of hydrogen atom,Expression for radius of nth possible orbit, velocity and energy of electron in his orbit, of hydrogen line spectra (qualitative treatment only). | 12/11/2026 | 17/11/2026 | 4 |
| | 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 | 18/11/2026 | 21/11/2026 | 4 |
| | 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. | 23/11/2026 | 27/11/2026 | 4 |

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| | | Revision | 30/11/2026 | | |
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| Periodic Test/Half Yearly/Annual Marking Scheme : 2026-27 | | | |
| Class : | XII | Subject : PHYSICS | |
| S.No. | PT/Half Yearly/Pre Board | Chapter / Topic | Max. Marks |
| 1 | PT-1 | 1 Electric Charges and Fields | 20 |
| 2 | PT-2 | 1.Current electricity 2.Moving charge and magnetism | 20 |
| 3 | HALF YEARLY | 1 Electric Charges and Fields 2.Electrostatic Potential and Capacitance 3.Current electricity 4.Moving Charges and Magnetism 5.Magnetism and Matter 6.Electromagnetic Induction 7.Alternating Current | 70 |
| | PRACTICAL EXAM | Two experiments one from each section 7+7 Practical record (experiment and activities) 5 One activity from any section 3 Investigatory Project 3 Viva on experiments, activities and project 5 | 30 |
| 4 | PT-3 | 1.Electromagnetic wave 2.Ray Optics and Optical Instruments | 6+14 |
| 5 | PREBOARD EXAM (Max Marks -70) | 1. Electric Charges and Fields 2.Electrostatic Potential and Capacitance. 3. current and electricity. | 16 |
| | | 4. Moving Charges and Magnetism 5. Magnetism and matter 6.Electromagnetic induction 7.Alternating Current | 17 |
| | | 8.Electromagnetic wave 9.Ray Optics and Optical Instruments 10. wave optics | 18 |
| | | 11.Dual nature of radiation and matter. 12.Atoms. 13. Nuclei . | 12 |
| | | 14 Semiconductors Electronics : Materials, Devices and Simple Circuits | 7 |