



WEST BENGAL BOARD (WBCHSE) · CLASS 12

Physics

WBCHSE Higher Secondary Physics curriculum aligning with national competitive standards (NEET/JEE) and Board semester assessments in electromagnetism, optics, quantum theory, and semiconductor electronics.

Board: West Bengal Council of Higher Secondary Education (New Semester Framework)

Theory: 70 Marks (Sem III & IV)

Internal/Practical: 30 Marks (Practical)

Exam Duration: 3 Hours 15 Mins

UNIT-WISE SYLLABUS & MARKS BREAKDOWN

UNIT	CHAPTERS & PRESCRIBED TOPICS	MARKS
Semester III	Electrostatics & Current Electricity Electrostatics: Coulomb's law, electric field, electric potential, Gauss's theorem, capacitors in series and parallel, energy density; Current Electricity: Drift velocity, Ohm's law, Kirchhoff's laws, Wheatstone bridge, potentiometer, heating effect of electric current	18
Semester III	Magnetic Effects of Current & Magnetism Biot-Savart law, Ampere's circuital law, force on charged particles, cyclotron motion, moving coil galvanometer, magnetic dipole, diamagnetic, paramagnetic, and ferromagnetic substances	17
Semester IV	Electromagnetic Induction, AC & EM Waves Faraday's laws of induction, Lenz's law, eddy currents, self and mutual inductance; Alternating current: peak and RMS value, LCR series circuit, resonance, power factor, transformers; Electromagnetic waves: characteristics and spectrum	15
Semester IV	Optics, Dual Nature & Electronics Ray Optics: Reflection, refraction, total internal reflection, lenses, prism, optical instruments; Wave Optics: Huygens' principle, interference, diffraction; Dual nature of matter and radiation, Photoelectric effect, de Broglie relation; Atoms and Nuclei; Semiconductor Electronics: p-n junction diode, rectifiers, Zener diode, logic gates (AND, OR, NOT, NAND, NOR)	20

INTERNAL / PRACTICAL ASSESSMENT SCHEME (30 MARKS (PRACTICAL))

EVALUATION COMPONENT	MARKS WEIGHTAGE
Practical Examination Two lab experiments (Section A and Section B), laboratory journal, viva voce	30 Marks

RECOMMENDED REFERENCE LITERATURE

Prescribed Textbooks: Chhaya Physics Class XII, NCERT Physics Class 12, Excellence Higher Secondary Derivation Compendium

Every unit in this curriculum is taught with structured conceptual lectures, followed by weekly speed-testing, detailed mistake analysis, and dedicated 1:1 doubt-clearing sessions to build board exam confidence.

Excellence Tuition Centres: Sarsuna (Opp. High School) · Joka · Chatterjee Para (Behala)

Admissions & Inquiries: +91 89022 70803 · excellence-tuition.vercel.app