

SYLLABUS

CLASS : 12
 SUBJECT : PHYSICS
 TEACHER'S NAME : MANOJ KUMAR SRIVASTAVA

CHAPTER'S NAME	TOPIC'S NAME	MONTH	NO. OF PERIODS
1.ELECTRIC CHARGES AND FIELDS	ELECTRIC CHARGES, CONDUCTORS AND INSULATORS, CHARGING BY INDUCTION, BASIC PROPERTIES OF ELECTRIC CHARGE, COULOMB'S LAW FORCE BETWEEN MULTIPLE CHARGES, ELECTRIC FIELD, ELECTRIC FIELD LINES, ELECTRIC FLUX, ELECTRIC DIPOLE DIPOLE IN AN UNIFORM EXTERNAL FIELD, CONTINUOUS CHARGE DISTRIBUTION. GAUSS'S LAW, APPLICATION OF GAUSS'S LAW	APRIL	23
2.ELECTROSTATIC POTENTIAL AND CAPACITANCE	ELECTROSTATIC POTENTIAL, POTENTIAL DUE TO A POINT CHARGE, POTENTIAL DUE TO AN ELECTRIC DIPOLE, POTENTIAL DUE TO A SYSTEM OF CHARGES, EQUIPOTENTIAL SURFACE POTENTIAL ENERGY OF A SYSTEM OF CHARGES, POTENTIAL ENERGY IN AN EXTERNAL FIELD ELECTROSTATICS OF CONDUCTORS, DIELECTRICS AND POLARISATION, CAPACITORS AND CAPACITANCE. THE PARALLEL PLATE CAPACITOR, EFFECT OF DIELECTRIC OF CAPACITANCE, COMBINATION OF CAPACITORS, ENERGY STORED IN A CAPACITOR	MAY	
3.CURRENT ELECTRICITY	ELECTRIC CURRENT, ELECTRIC CURRENT IN CONDUCTORS, OHM'S LAW, DRIFT OF ELECTRONS AND THE ORIGIN OF RESISTIVITY, LIMITATIONS OF OHM'S LAW. RESISTIVITY OF VARIOUS MATERIALS, TEMPERATURE DEPENDENCE OF RESISTIVITY, ELECTRICAL ENERGY, POWER CELLS, EMF, INTERNAL RESISTANCE, CELLS IN SERIES AND IN PARALLEL, KIRCHOFF'S LAW, WHEATSTONE BRIDGE, METER BRIDGE, POTENTIOMETER.	MAY/JUNE	15
4.MOVING CHARGES AND MAGNETISM	MAGNETIC FORCE, MOTION IN COMBINED ELECTRIC AND MAGNETIC FIELDS, MAGNETIC FIELD DUE TO A CURRENT ELEMENT, BIOT – SAVART LAW. MAGNETIC FIELD ON THE AXIS OF A CIRCULAR CURRENT LOOP, AMPERE'S CIRCUITAL LAW, THE SOLENOID AND THE TOROID, FORCE BETWEEN TWO PARALLEL CURRENTS, THE AMPERE, TORQUE ON CURRENT LOOP, MAGNETIC DIPOLE, THE MOVING COIL GALVANOMETER	JUNE/JULY	16
5.MAGNETISM AND MATTER	THE BAR MAGNET, MAGNETISM AND GAUSS'S LAW, THE EARTH'S MAGNETISM MAGNETISATION AND MAGNETIC INTENSITY, MAGNETIC PROPERTIES OF MATERIALS	AUGUST	
6.ELECTRO-MAGNETIC INDUCTION	THE EXPERIMENTS OF FARADAY AND HENRY, MAGNETIC FLUX, FARADAY'S LAW OF INDUCTION, LENZ'S LAW AND CONSERVATION OF ENERGY MOTIONAL ELECTROMOTIVE FORCE, ENERGY CONSIDERATION : A QUANTITATIVE STUDY, INDUCTANCE, AC GENERATOR	AUGUST	19
7.ALTERNATING CURRENT	AC VOLTAGE APPLIED TO A RESISTOR, REPRESENTATION OF AC CURRENT AND VOLTAGE BY ROTATING VECTORS – PHASORS AC VOLTAGE APPLIED TO AN INDUCTOR, AC VOLTAGE APPLIED TO A CAPACITOR, AC VOLTAGE APPLIED TO A SERIES LCR CIRCUIT, LC OSCILLATIONS, TRANSFORMERS	AUGUST/ SEPTEMBER	
8.ELECTRO - MAGNETIC WAVES	ELECTROMAGNETIC WAVES, ELECTROMAGNETIC SPECTRUM.	SEPTEMBER	2
9.RAY OPTICS AND OPTICAL INSTRUMENTS	REFRACTION, TOTAL INTERNAL REFLECTION REFRACTION AT SPHERICAL SURFACES AND BY LENSES, REFRACTION THROUGH A PRISM DISPERSION BY A PRISM, SOME NATURAL PHENOMENA DUE TO SUNLIGHT, OPTICAL INSTRUMENTS.	SEPTEMBER	18
10.WAVE OPTICS	HUYGENS PRINCIPLE, REFRACTION AND REFLECTION OF PLANE WAVES USING HUYGENS PRINCIPLE	SEPTEMBER/OCT OBER	
11. DUAL NATURE OF RADIATION AND MATTER	ELECTRON EMISSION, PHOTOELECTRIC EFFECT, EXPERIMENTAL STUDY OF PHOTOELECTRIC EFFECT PHOTOELECTRIC EFFECT AND WAVE THEORY OF LIGHT, EINSTEIN'S PHOTOELECTRIC EQUATION: ENERGY QUANTUM OF RADIATION. PARTICLE NATURE OF LIGHT: THE PHOTON, WAVE NATURE OF MATTER	OCTOBER	7
12. ATOMS	ALPHA-PARTICLE SCATTERING AND RUTHERFORD'S NUCLEAR MODEL OF ATOM, ATOMIC SPECTRA, BOHR MODEL OF THE HYDROGEN ATOM. THE LINE SPECTRA OF THE HYDROGEN ATOM, DE BROGLIE'S EXPLANATION OF BOHR'S SECOND POSTULATE OF QUANTISATION	OCTOBER	11
13.NUCLEI	COMPOSITION AND SIZE OF NUCLEUS MASS – ENERGY RELATION, MASS DEFECT, NUCLEAR FISSION, NUCLEAR FUSION.	OCTOBER	
14.SEMICONDUCTOR ELECTRONICS: MATERIALS, DEVICES AND SIMPLE CIRCUITS	CLASSIFICATION OF METALS, CONDUCTORS AND SEMICONDUCTORS, INTRINSIC SEMICONDUCTOR, EXTRINSIC SEMICONDUCTOR p-n JUNCTION, SEMICONDUCTOR DIODE, APPLICATION OF JUNCTION DIODE AS A RECTIFIER, SPECIAL PURPOSE p-n JUNCTION DIODES	OCTOBER/NOVE MBER	7

TOTAL NO. OF PERIODS REQUIRED : 118