



ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

Syllabus planning for the Academic Year 2019



SUBJECT: Physics..... TERM: Pre-Test.....

TEACHER'S NAME: AMBARNATH BANERJEE (SECTION -A2)/ SOUMITRA MAITY (SECTION -A1)

NO. OF WORKING DAYS:.... 91..

NO. OF PERIODS AVAILABLE: 73...

CLASS: ... XII.... SECTION:

MONTH	NO. OF PERIODS	LESSONS	TOPICS COVERED	HOMEWORK	CLASS WORK
APRIL	4	Electrostatics (Unit-I)	i. Coulomb's Law ii. Torque experienced by a dipole placed in an electric field	i. Theorem-I : Field intensity at a distance & for an electric dipole along its' axis	i. Explanation of Topics ii. Understandings of the topics covered
MAY	10	Electrostatics (Unit-I)	i. Electric potential energy ii. Gauss's theorem & its applications in different cases	ii. Verify, $\tau = P \times E$ ii. Few problems related to Gauss's theorem	i. Graphical explanation ii. Few problems related to P.E
JUNE	20	1. Electrostatics (Unit-I) 2. Current Electricity (Unit-II)	i. Capacitor, energy stored in a capacitor, Van-de-Graff generator ii. Dielectric iii. Ohm's law, graphical explanation, internal resistance & p.d. & e.m.f. of a cell, combination of cells iv. Kirchoff's law, Bridges and potentiometer	i. Determination of capacitance for a parallel plate capacitor ii. Estimation of main current flowing through & mixed circuit	i. Problems related to current electricity ii. Problems related to capacitors with circuit
JULY	25	1. Magnetic effect of current & Magnetism (Unit-III) 2. Electromagnetic induction & A.C. (Unit-IV) <u>29th JULY PRETEST FOR CLASS XII STARTS</u>	i. Oersted's experiment, Biot-Savat Law & its' applications, Ampere circuital law & its application, cyclotron principle, Torque experienced by a current loop in uniform magnetic field ii. Magnetism iii. Induction-Faraday's Law, Lenz's Law, Self Inductance and Mutual Inductance, $I_0, V_0, I_{r.m.s}, V_{r.m.s}$ & LCR Circuit, A.C.	i. Verify $\tau = BinAsin\theta$ ii. Working principle of Transformer	i. Explanation of theorems mentioned in the topics covered and related numerical ii. Graphical explanations
AUGUST	24	1. Electromagnetic waves (Unit-V) 2. Atoms & Nuclei (Unit-VIII) 3. Communication System (Unit-X)	ELECTROMAGNETIC SPECTRUM, E.B.C, DIFFERENT SOURCES OF E.M. WAVES, THEIR USES, BOHR MODEL, H-SPECTRUM, X-RAYS, RADIOACTIVITY, DECAY-LAW, MASS ENERGY RELATION, MASS DEFECT, NUCLEAR FISSION AND FUSION, BLOCK DIAGRAM, SKY AND SPACE WAVE PROPAGATION, MODULATION	i. Find out relation among E_0, B_0 & C ii. Problems on X-Ray Wave Length iii. Flow chart of Block Diagram for communication system	i. Increasing & decreasing order of E.M. Waves according to wavelength and frequency ii. Nuclear Fission & Fusion equations and explanations iii. Moseley's Law

Teachers are requested to prepare a LESSON PLAN for each Lesson to be taught. The Lesson plans are to be submitted along with the monthly planner.

Name of the Teacher : AMBARNATH BANERJEE, SOUMITRA MAITY

Signature of Teacher : Ambarnath Banerjee, Soumitra Maity

PRINCIPAL

Submitted on : 28.01.2019

Academic Co-ordinator : Soumitra Maity

VICE PRINCIPAL



FOR GOD AND COUNTRY

ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

Syllabus planning for the Academic Year 2019



SUBJECT: Physics..... TERM: Selection Test.....

TEACHER'S NAME: AMBARNATH BANERJEE (SECTION -A2)/ SOUMITRA MAITY (SECTION -A1)

NO. OF WORKING DAYS:-... 55..

NO. OF PERIODS AVAILABLE: 40...

CLASS: ... XII.... SECTION:

MONTH	NO. OF PERIODS	LESSONS	TOPICS COVERED	HOMEWORK	CLASS WORK
SEPTEMBER	23	Optics(Unit-VI) <u>17th SEPTEMBER SUBMISSION OF PROJECT</u>	i. Spherical mirror, Refraction of light, Refraction at Spherical surfaces, Lenses & its related fact prism, scattering, Raman Effect ii. Optical Instrument – Microscope, telescope & magnifying prism iii. Wave Optics	i. Verify lens formula, $1/v - 1/u = 1/f$ ii. Verify mirror equation = $1/v + 1/u = 1/f$ iii. Ray diagram for a real object & its' image through lens	i. Few problems related to lens & mirror ii. Theorems related to lens and prism iii. Interference
OCTOBER	15	i. Dual nature of matter & relation (Unit-VII) ii. Electronic devices (unit-IX)	i. Einstein's photo electric equation: particle nature of light, Matter waves, de-Broglie relation ii. Semiconductor, I-V characteristics, Zener Diode, Transistor logic gates(OR,AND,NOT,NAND,NOR)	i. Establish Einstein's photo electric equation with quantum theory. ii. Draw logic gate circuit symbols with Truth Table.	i. Explanation of photo electric effect. Few problems related to de-Broglie wave length. ii. I-V graphs of semiconductors & Transistor
NOVEMBER	2	<u>4th NOVEMBER SELECTION TEST FOR CLASS XII STARTS</u>			

Teachers are requested to prepare a LESSON PLAN for each Lesson to be taught. The Lesson plans are to be submitted along with the monthly planner.

Name of the Teacher : AMBARNATH BANERJEE, SOUMITRA MAITY

Signature of Teacher : Ambarnath Banerjee, Soumitra Maity

Submitted on : 28.01.2019

Academic Co-ordinator : Soumitra Maity
28/1/19

PRINCIPAL

VICE PRINCIPAL