

YEAR PLAN 2018 – 2019

Grade XII Physics

The academic year is divided into two sessions.

Session One: June to August 2018.

Session Two: September 2018 to December 2018

Continuous Assessment: June, July, October

Summative Assessment I – August 2018

Model Exam I – December 2018

Model Exam II – January 2019

AIM : To understand principles of Physics and their application in daily life situations.

ENDURING UNDERSTANDING : An understanding of the world around them and an appreciation for the underlying laws that govern it.

GENERAL OBJECTIVES : An increased ability to solve any problems that they may encounter in the various examinations.

Acquisition of knowledge and understanding of terms, concepts, facts, processes, techniques and principles relating to Physics

To develop the ability to apply the knowledge of contents and principles of Physics in new and unfamiliar situations.

To develop skills in experimenting and proper handling of apparatus used in Physics.

Duration	Topics/Units	Specific Learning Objectives	Activities	Resources
March- April	<p><u>Current Electricity</u></p> <ul style="list-style-type: none"> • Sources of Current • Electric Current- Ohm's Law • Direct Current Circuits • Electric Power- Heating Effect of Current 	<p>To state ohms law and apply in practical situations .To appreciate ray optics as a useful approximation for studying em waves</p>	<p>Brainstorming Class room discussion Practice problems Lecture,Peer learning Teacher guided work, Independent work</p>	<p>ISC Physics –Kumar. Mittal, ISC Physics (Vivekanandan), New Millennium Physics (SK Sharma, R Jerath), ABC of Physics (Satish Gupta)</p>
June	<p><u>Electrostatics</u></p> <ul style="list-style-type: none"> • Electric Charge- Coulomb's Law • Concept of Electric Field • Gauss's Theorem • Electric Potential, Capacitance and Dielectrics <p><u>Electrons and Photons</u></p> <ul style="list-style-type: none"> • Electrons, Photoelectric Effect, Wave Particle Duality, Atoms <p><u>Nuclei and Nuclear Energy</u></p> <ul style="list-style-type: none"> • Nuclei • Radioactivity 	<p>To develop an intuitive understanding about charges, Electric field and potential, capacitors.</p> <p>To give an introduction to modern physics To further investigate modern physics. To investigate Einstein's mass energy equivalence relation and its implications.</p>	<p>Class room discussion Practice questions Brainstorming Class room discussion Practice problems Lecture Peer learning Teacher guided work, Independent work</p>	<p>ISC Physics –Kumar. Mittal, ISC Physics (Vivekanandan), New Millennium Physics (SK Sharma, R Jerath), ABC of Physics (Satish Gupta)</p>
July	<p>Monthly Test</p> <p><u>Ray Optics & Optical Instruments</u> Refraction at a Plane Surface and Prism Refraction at a Spherical Surface Dispersion, Optical Instruments</p> <p><u>Semi-Conductor Devices</u> Energy Bands In Solids and Junction Diodes The Junction Transistor</p> <p><u>Digital Electronics</u>- Logic Gates</p>	<p>To give an introduction to Optical physics and instruments</p> <p>To investigate the fundamentals of electronics and to appreciate the energy bands in solids, to apply principles of logic gates to everyday situations</p>	<p>Explanation Practise sums Discussion on projects as per syllabus Peer learning Teacher guided work, Independent work</p>	<p>ISC Physics –Kumar. Mittal, ISC Physics (Vivekanandan), New Millennium Physics (SK Sharma, R Jerath), ABC of Physics (Satish Gupta)</p>
August	<p><u>Summative Assessment I</u> <u>Onam Holidays</u></p>			

September	<p>Wave Optics Electro Magnetic Waves Huygens's Principle and Interference Diffraction, Polarization</p> <p>Magnetism Magnetic Fields Superposition of Magnetic Fields Properties of Magnetic Substances</p> <p>Communication Systems Propagation of em waves Sky and space wave propagation Modulation and need. Elements of communication systems</p>	To gain an appreciation for light as an electromagnetic wave, by investigating various wave phenomena like interference and diffraction	Brainstorming Class room discussion Practice problems Lecture Peer learning Teacher guided work, Independent work	ISC Physics –Kumar. Mittal, ISC Physics (Vivekanandan), New Millennium Physics (SK Sharma, R Jerath), ABC of Physics (Satish Gupta)
October	<p>Electromagnetism</p> <ul style="list-style-type: none"> • Magnetic Effect of Current • Force on a Moving Charge in a Magnetic Field • Current Loop as a Magnetic Dipole- Moving Coil Galvanometer • Electro Magnetic Induction • Transient Currents <p>Electrical Machines- A.C. Generators</p> <p>Alternating Current Circuits</p> <ul style="list-style-type: none"> • Alternating Current Circuits 	To give an introduction to modern physics To further investigate modern physics. To investigate Einstein's mass energy equivalence relation and its implications. To investigate the fundamentals of electronics and to appreciate the energy bands in solids, to apply principles of logic gates to everyday situations	Brainstorming Class room discussion Practice problems Lecture Peer learning Teacher guided work, Independent work	ISC Physics –Kumar. Mittal, ISC Physics (Vivekanandan), New Millennium Physics (SK Sharma, R Jerath), ABC of Physics (Satish Gupta)
November	<ul style="list-style-type: none"> • X-rays <p>Monthly Test Revision</p>	Revise all topics and reinforcement done if needed	Discussion and Practise sums, Revision tests	Past papers and Specimen papers
December	Revision Model Exam I X'mas Holidays	Recall previous topics for exams	Discussion Worksheets	Frank ISC Model papers
January	Revision Model Exam II	Revise all topics and reinforcement done if needed	Discussion and Practise sums, Revision test	Past papers and Specimen papers
February	Mock & Board Practical Examination		Discussion , revision	Past papers
March	Board Examination			

Projects/ Field trips: (As per the guidelines given by ISC) July 2019

Facilitators' name: Mrs Annie Cherian

Text Book: ISC Physics –Kumar. Mittal

Approved by the Principal