

| SRI LANKAN SCHOOL - MUSCAT | | | | | | SCHEME OF WORK | | ACADEMIC YEAR 2016 / 2017 | |
|----------------------------|---------------|------------------|---|---|-------------------------------------|----------------------------------|---------|---------------------------|--|
| CLASS : 11 | | SUBJECT: Physics | | | TEACHER : Mr.Thushara, Mr.Viduransi | | | | |
| Month | No.of Periods | Unit No. | TOPIC / DETAILS | Intended Learning Objectives | | | Remarks | | |
| September | | | | | | School Reopens - 1st Term | | | |
| Week 1 | 2 | 20 | Introduction to the solids , liquids and gases | Investigate the changes that occur when a solid melts to form a liquid, and when a liquid evaporates or boils to form a gas | | | | | |
| Week 2 | 3 | 20.1 | Properties of the different states of matter | Describe the arrangement and motion of particles in solids, liquids and gases | | | | | |
| Week 3 | 5 | 20.2 | The gas laws | Use the relationship between the pressure and Kelvin temperature of a fixed mass of gas at constant volume: | | | | | |
| | | | | Use the relationship between the pressure and volume of a fixed mass of gas at constant temperature: | | | | | |
| Week 4 | 3 | | Revision , Unit test | | | | | | |
| Week 5 | 5 | 21 | Introduction to Magnetism and Electromagnetism | Identify that magnets repel and attract other magnets and attract magnetic substances | | | | | |
| | | | Monthly Test | | | | | | |
| October | | | | | | | | | |
| Week 6 | 5 | 21.1 | Properties of Magnetic and non magnetic materials | Describe the properties of magnetically hard and soft materials | | | | | |
| | | | | Explain the term 'magnetic field line' | | | | | |
| Week 7 | 5 | 21.2 | Magnetic field | Identify that magnetism is induced in some materials when they are placed in a magnetic field Describe experiments to investigate the magnetic field pattern for a permanent bar magnet and that between two bar magnets Describe how to use two permanent magnets to produce a uniform magnetic field pattern. | | | | | |
| Week 8 | 4 | 21.2 | Electromagnetism and applications | Explain that an electric current in a conductor produces a magnetic field around it | | | | | |
| | | | | Sketch and recognise magnetic field patterns for a straight wire, a flat circular coil and a solenoid when each is carrying a current | | | | | |
| Week 9 | 5 | 22 | Electromagnetic Induction | Identify that a voltage is induced in a conductor or a coil when it moves through a magnetic field or when a magnetic field changes through it and describe the factors which affect the size of the induced voltage | | | | | |
| November | | | | | | | | | |
| Week 10 | 5 | 22.1 | The generator and transformer | Describe the generation of electricity by the rotation of a magnet within a coil of wire and of a coil of wire within a magnetic field and describe the factors which affect the size of the induced voltage | | | | | |
| | | | | Describe the structure of a transformer, and understand that a transformer changes the size of an alternating voltage by having different numbers of turns on the input and output sides | | | | | |
| Week 11 | 5 | | Revision , Monthly Test | | | | | | |
| Week 12 | 4 | 23 | Atoms and Radioactivity | Explain the terms atomic (proton) number, mass (nucleon) number and isotope | | | | | |
| | | | | Identify that alpha and beta particles and gamma rays are ionising radiations emitted from unstable nuclei in a random process | | | | | |

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| Week 13 | 5 | 23.1 | Ionising radiation | Describe the nature of alpha and beta particles and gamma rays and recall that they may be distinguished in terms of penetrating power | |
| | | | | Explain that ionising radiations can be detected using a photographic film or a Geiger-Muller detector | |
| Week 14 | 3 | 23.2 | Nuclear Transformations | Describe the effects on the atomic and mass numbers of a nucleus of the emission of each of the three main types of radiation | |
| December | | | | | |
| Week 15 | 5 | | Revision | | |
| Week 16 | | | 1st term end exams | | |
| Week 17 | | | 1st term tests and report work | | |
| Week 18 | | | Vacation | | |
| January 2014 | | | | | |
| Week 19 | | | Vacation | | |
| School Reopens - 2nd Term | | | | | |
| | | | Radiation and Half life | Describe that the activity of a radioactive source decreases over a period of time and is measured in becquerels | |
| Week 20 | 4 | 24 | | Describe the term 'half-life' and identify that it is different for different radioactive isotopes | |
| | | | | Use the concept of half-life to carry out simple calculations on activity | |
| Week 21 | 5 | 25 | Application of Radioactivity | Describe the uses of radioactivity in medical and non-medical tracers, in radiotherapy, and in the radioactive dating of archaeological specimens and rocks | |
| Week 22 | 5 | 25.1 | Uses and health hazards of ionising radiation | Describe the dangers of ionising radiations, including: 1. radiation can cause mutations in living organisms 2. radiation can damage cells and tissue 3. the problems arising in the disposal of radioactive waste and describe how the associated risks can be reduced. | |
| | | | | Describe the results of Geiger and Marsden's experiments with gold foil and alpha particles | |
| Week 23 | 5 | 26 | Particles | Describe Rutherford's nuclear model of the atom and how it accounts for the results of Geiger and Marsden's experiment and understand the factors (charge and speed) which affect the deflection of alpha particles by a nucleus | |
| | | | | Describe that a nucleus of U-235 can be split (the process of fission) by collision with a neutron, and that this process releases energy in the form of kinetic energy of the fission products | |
| February | | | | | |
| Week 24 | 5 | 26 | Particles | Explain that a chain reaction can be set up if the neutrons produced by one fission strike other U-235 nuclei | |
| Week 25 | 4 | | Revision - 2015 June paper 1 & 2 | | |
| Week 26 | 5 | | Revision - 2014 Jan Paper 1 & 2 | | |
| Week 27 | 2 | | Revision - 2014 June Paper 1 & 2 | | |
| March | | | | | |
| Week 27 | 3 | | Revision - 2013 Jan paper 1 & 2 | | |
| Week 28 | 5 | | Revision - 2013 June paper 1 & 2 | | |
| Week 29 | 5 | | Revision - 2012 Jan paper 1 & 2 | | |
| Week 30 | | | 2nd term end exams | | |
| Week 31 | | | 2nd term end exams | | |
| April | | | | | |
| Week 32 | | | Paper discussion and report work | | |
| Week 33 | | | April vacation | | |
| Week 34 | | | School Reopens - 3rd Term -Seminar for year 11 | | |
| Week 35 | | | Seminar for Year 11 | | |

May

Week 36

Edexcel Exams