**INDIAN SCHOOL AL WADI AL KABIR**

**DEPARTMENT OF SCIENCE 2016-17**

**WEEKLY PLAN-CLASS 12 -PHYSICS**

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|  | MONTH OF AUGUST 2016 | | | | |
| CLASS 12 | WEEK1 | WEEK2 | WEEK3 | WEEK4 | WEEK5 |
| PHYSICS | Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; er.  LC oscillations (qualitative treatment only), | LCR series circuit, resonance;power in AC circuits, wattless current. AC generator and transformer. | Electromagnetic waves .Need for displacement current, Electromagnetic waves and their characteristics (qualitative ideas only). Transverse nature of electromagnetic waves.  Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses. | Reflection of light, spherical mirrors, mirror formula. Refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula. Magnification, power of a lens, combination of thin lenses in contact, combination of a lens and a mirror.Refraction and dispersion of light through a prism. Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset. | Optical instruments: Microscopes & astronomical telescopes (reflecting and refracting) and theirmagnifying powers.Wave front and Huygen's principle, reflection & refraction of plane wave at a plane surface using wave fronts. |

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| MONTH OF SEPTEMBER 2016 | | | | |
| CLASS 12 | WEEK1 and 2 | WEEK3 | WEEK4 | WEEK5 |
| PHYSICS | Proof of laws of reflection and refraction using Huygen's principle  Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum. | Resolving power of microscopes and astronomical telescope. Polarisation, plane polarised light, Brewster's law, uses of plane polarised light and Polaroids.  **Revision** | **FIRST ASSESSMENT** | **FIRST ASSESSMENT** |

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| MONTH OF OCTOBER 2016 | | | | | | |
| CLASS 12 | WEEK1 | WEEK2 | | WEEK3 | | WEEK4 |
| PHYSICS | Dual Nature of Matter and Radiation  Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of lightMatter waves-wave nature of particles, de Broglie relation. Davisson-Germer experiment (experimental details should be omitted; only conclusion should be explained).  Atom and Nuclei  Alpha-particle scattering experiment; Rutherford's model of atom; | Bohr model, energy levels, hydrogen spectrum..  Composition and size of nucleus, Radioactivity, alpha, beta and gamma particles/rays and their properties; radioactive decay lawMass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.  ; | Semiconductors  Energy bands in solids (Qualitative ideas only) conductor, insulator and semiconductor; semiconductor diode - I-V characteristics in forward and reverse bias, diode as a rectifier  I-VCharacteristics of LED, photodiode, solar cell, and Zener diode; Zener diode as a voltage regulator. | | Junction transistor, transistor action, characteristics of a transistor, transistor as an amplifier (common emitter configuration). Logic gates (OR, AND, NOT, NAND and NOR). Elements of a communication system (block diagram only); bandwidth of signals (speech, TV and digital data); bandwidth of transmission medium | |

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| MONTH OF NOVEMBER 2016 | | | | |
| CLASS 12 | WEEK1 and 2 | WEEK 3 | WEEK 4 | WEEK 5 |
| PHYSICS | Communication System  Propagation of electromagnetic waves in the atmosphere, sky and space wave propagation. Need for modulation. Production and detection of an amplitude-modulated wave. Basic ideas about internet, mobile telephony and global positioning system (GPS) | **Revision** | **Revision** | **Revision** |

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| MONTH OF DECEMBER 2016 | | | | |
| CLASS 12 | WEEK1 and 2 | WEEK 3 | WEEK 4 | WEEK 5 |
| PHYSICS | **Revision**  **First Rehearsal Examination** | **First Rehearsal Examination** | **Winter Break** | **Winter Break** |

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| MONTH OF JANUARY2017 | | | | |
| CLASS 12 | WEEK1 and2 | WEEK 3 | WEEK 4 | WEEK 5 |
| PHYSICS | **Winter Break** | **Second Rehearsal Examination** | **Second Rehearsal Examination** | **Second Rehearsal Examination** |

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| MONTH OF FEBRUARY2017 | | | | |
| CLASS 12 | WEEK1 | WEEK2 | WEEK3 | WEEK4 |
| PHYSICS | **Practical Examination** | **CBSE Practical Examination** | **Revision** | **Revision** |

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| MONTH OF MARCH 2017 | | | | |
| CLASS 12 | WEEK1 | WEEK2 | WEEK3 | WEEK4 |
| PHYSICS | **CBSE Board Examination** | **CBSE Board Examination** |  |  |