**AIR FORCE SCHOOL BAMRAULI**

**ANNUAL SPLIT UP OF SYLLABUS**

**ACADEMIC SESSON 2022-23**

**CLASS : 12**

**SUBJECT : PHYSICS**

**TEACHER’S NAME : MANOJ KUMAR SRIVASTAVA**

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| **CHAPTER’S NAME** | **TOPIC’S NAME** | **MONTH** |
| **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, CONTINOUS CHARGE DISTRIBUTION.  GAUSS’S LAW, APPLICATION OF GAUSS’S LAW | APRIL |
| **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 CODUCTERS, 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, ENTERNAL RESISTACE, CELLS IN SERIES AND IN PARALLEL,  KIRCHOFF’S LAW, WHEATSTONE BRIDGE, METER BRIDGE, POTENTIOMETER. | MAY/JUNE |
| **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 | JUNE/JULY |
|  | PARALLEL CURRENTS, THE AMPERE, TORQUE ON CURRENT LOOP, MAGNETIC DIPOLE, THE MOVING COIL GALVANOMETER |  |
| **5.MAGNETISM**  **AND MATTER** | THE BAR MAGNET, MAGNETISM AND GAUSS’S LAW,THE EARTH’S MAGNETISM MAGNETISTION 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 QUATITATIVE STUDY, INDUCTANCE, AC GENERATOR | AUGUST |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 SEMICONDUCORS, INTRINSIC SEMICONDUCTOR, EXTRINSIC SEMICONDUCTOR  p-n JUNCTION, SEMICONDUCTOR DIODE, APPLICATION OF JUCTION DIODE AS A RECTIFIER, SPECIAL PURPOSE p-n JUNCTION DIODES | OCTOBER/NOVE  MBER |

TOTAL NO. OF PERIODS REQUIRED : 118