**Pt. C.L.S. Govt. College, Karnal**

**LESSON PLAN (w.e.f. January 2024)**

**Name: Dr. Poonam Rani Subject: MDC (Physics)**

**Class: B.A. I year (Sec –D) Paper: Fundamentals of Physics**

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| **Month/Week** | Contents |
| Week 1 | Light and optics-Nature and properties of light, its speed, frequency and  wavelength; Reflection of light-types of reflection |
| Week 2 | Reflection and its importance in  daily life, laws of reflection, multiple reflection by mirrors and their applications. |
| Week3 | Refraction of light- laws of refraction, refractive index, refraction of light  through prism (dispersion of light), formation Rainbow, twinkling of stars,  advance. |
| Week 4 | Sunrise and delayed Sunset; Scattering of light and blue colour of  the sky; apparent depth, total internal reflection and its important  applications. Test |
| Week 5 | Image formation through reflection-images formed by plane mirrors,  multiple images formed by two flat mirrors and optical illusions; |
| Week 6 | Images formed by parabolic mirrors and spherical mirrors- Concave and convex  mirrors, ray diagrams, |
| Week7 | mirror equation and magnification; applications of  plane and curved mirrors in daily life. |
| Week 8 | Image formation through refraction- images by convex and concave lenses,  ray diagrams and lens equation.  Optical instruments- Camera, eye, telescope and microscope |
| Week 9 | Electricity- electric charge, types of charges, unit of charge, frictional  electricity, electricity by conduction and electric current, units of electric  current, measurement of current, conductors and insulators; resistance,  resistivity and Ohm‟s law, electric potential and potential difference, emf |
| Week 10 | Electric circuit- resistor, capacitor, battery, ammeter and voltmeter; Series  and parallel combinations of resistors, electrical wiring in houses and  electrical safety (fuse, hot wire, neutral, ground and short circuit), electric  power and electric power transmission; Heating effect of current and its  practical applications. |
| Week 11 | Magnetic effect of electric current- Magnetic field and field lines, bar  magnet, magnetic field and direction of field due to a current- through straight conductor and through a circular loop; solenoid, electromagnet |
| Week 12 | Structure of an atom- Rutherford‟s model of an atom, Bohr‟s model of an  atom and composition of the atom-electron, proton and neutron, orbits or  shells (energy levels in an atom) |
| Week 13 | distribution of electrons in different shells  of the atom, atomic number and atomic mass of an atom, core shell and  outer shell, valency of an atom |
| Week 14 | excitation and ionization of the atom,  meaning of atomic transitions; Discovery of X-rays, Generation of X-rays,  their characteristics, applications and harmful effects; |
| Week 15 | Composition of nucleus, meaning of nuclear transitions and properties of α-, β- and γ-rays. Test and revision. |