

**VISVODAYA GOVT. DEGREE COLLEGE, VENKATAGIRI**  
**SPSR. NELLORE DISTRICT**  
**DEPARTMENT OF PHYSICS**

**SEMESTER - I, PAPER -I, MECHANICS & PROPERTIES OF MATTER**

- CO.1:** Physical signification of gradient, divergence and curl of the scalar and Vector fields.
- CO.2:** Conservation of energy and momentum applicable to rocket motion.
- CO.3:** Determination of elastic constants and deducing relation between  $y$ ,  $n$  and  $K$ .
- CO.4:** Describing the special theory of relativity postulates. Converting mass in to energy through Einstein relation.
- CO.5:** Central forces and describing the motion of planets.

**SEMESTER – II, PAPER-II, WAVES AND OSCILLATION**

- CO.1:** Deducing differential equations for waves and oscillations by using mathematical tools.
- CO.2:** Understanding the damped and forced oscillations by deriving differential equations.
- CO.3:** Understanding the complex vibrations using Fourier theorem.
- Co.4:** Understanding the vibrations on strings and bars by observing the functions of Violin, Guitars etc.
- CO.5:** understanding the ultrasonics and exploring its applications and production.

**SEMESTER – III, PAPER – III, WAVE OPTICS**

- CO.1:** Exploring the defects in lenses by studying spherical aberration, chromatic aberration, coma and astigmatism.
- CO.2:** Understanding the interference by observing the colors in thin films, Newton rings and patterns in wedge shaped films.
- CO.3:** Formation of spectra by grating and understanding the diffraction through single slit, double slit and N-slit.
- CO.4:** To understand the polarization by reflection, refraction and double refraction.
- CO.5:** Understanding the communication through fiber optics and applications of holography.

## **SEMESTER – IV, PAPER-IV, THERMIDYNAMICS**

- CO.1:** Understanding the Maxwell's law of distribution of molecular speeds, experimental verification and transport phenomena in gases.
- CO.2:** Understanding the efficiency and properties of thermodynamic cycles of heat engines, refrigerator and heat pumps.
- CO.3:** Deducing relationships among the internal energy, enthalpy, heat capacities, entropy, and Gibbs and Helmholtz free energy. And able to calculate, these energy functions from equations of state and heat capacity data.
- CO.4:** An ability to understand the basics of low temperature and different experimental methods to produce low temperature and their applications.
- CO.5:** Familiarizing the in depth knowledge about Wien's displacement, Rayleigh-Jean's laws in theory of radiation and measurement of radiation.

## **SEMESTER – V, PAPER-V, ELECTRICITY, MAGNETISM AND ELECTRONICS**

- CO.1:** To understand the uses of Coulomb's law and Gauss's law for electrostatics and properties of dielectric substances.
- CO.2:** To understand the concept of magnetism and electromagnetic induction such as self and mutual inductance.
- CO.3:** To determine the relation between current and voltage in LR, CR and LCR series and parallel resonance circuits.
- CO.4:** Acquiring knowledge about semiconductor diode, transistor and transistor as an amplifier.
- CO.5:** Understanding the number system in logic gates to interpret logic functions, circuits, truth table and Boolean algebra expressions.

## **SEMESTER – VI, PAPER-VI, MODERN PHYSICS**

- CO.1:** By observing dependence of atomic spectral lines on externally applied electric, magnetic fields and vector atom model.
- CO.2:** Understanding the dual nature of particle and able to know the electron diffraction phenomenon.
- CO.3:** Understanding the Schrödinger wave equations and energy of a particle in one dimensional box.
- CO.4:** Understanding the basic ideas of nucleus with its liquid drop model, shell model and magic numbers.
- CO.5:** Understanding the x-ray diffraction in crystals and their applications. Basic concepts of super conductivity.