SRI ADICHUNCHANAGIRI FIRST GRADE COLLEGE
CHANNARAYAPATNA-573116
Department of Physics

Programme Outcomes 2022-23

SEMESTER-V PAPER VII ELECTIVE PAPER I : SOLID STATE AND SEMICONDUCTOR PHYSICS

- Acquire basic knowledge of semiconductor , classification of solid on the basis band gap theory, concept of hole in a semiconductor, charge carrier density, mobility and continuity equation
- Learn how LED and solar cell work • Know the physics behind dia, para and ferromagnetism
- Familiarize with different types of liquid crystal, its uses and defects in solids
- Acquire knowledge of different types of polarisibility, classical and quantum theor ies of polarisability

SEMESTER-VI PAPER VIII : COMPULSORY PAPER I: SPECIAL THEORY OF RELATIVITY AND QUANTUM MECHANICS

- Gain clear knowledge about wave properties of particles, De Broglie waves and itsimplications on the uncertainty principle.
- Find solution to Schrödinger's equation for systems such as particle in a box, linear simple harmonic oscillato
- Describe departure from classical physics, basic principles of special theory of relativity
- Derive Lorentz transformation equations and their application to understand time, length and mass measurement in inertial frames

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No. on roll at the beginning of month

SEMESTER-VI PAPER IX : COMPULSORY PAPER II: NUCLEAR PHYSICS

- Gain a clear picture of nuclear composition and various nuclear models
- Have in depth knowledge about radio activity, nuclear fission and nuclear fusion, the relevance of nuclear transformation and energy production in stars
- Familiarize with fundamental particles of nature
- Understand the working of nuclear detectors and particle accelerators , realize the importance of Cosmic rays and its effects on earth
- Explain the origin of radioactivity, liquid drop and shell model of nucleus

Semester – II

Electricity & Magnetism

Programme Outcomes

- Discipline Knowledge: Knowledge of science and ability to apply to relevant areas. Problem solving:
- Problem solving: Execute a solution process using first principles of science to solve Problems related to respective discipline.
- Modern tool usage: Use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
- Ethics: Apply the professional ethics and norms in respective discipline.
- Individual and teamwork: Work effectively as an individual as a team member in a multidisciplinary team.
- Communication: Communicate effectively with the stake holders, and give and receive clear instructions.

Course Outcomes (COs)

- Demonstrate Gauss law, Coulomb's law for the electricfield, and apply it to systems of point charges as well asline, surface, and volume distributions of charges.
- Explain and differentiate the vector (electric fields,Coulomb's law) and scalar (electric potential, electricpotential energy) formalisms of electrostatics.
- Apply Gauss's law of electrostatics to solve a variety of problems.
- Describe the magnetic field produced by magnetic dipolesand electric currents.

- Explain Faraday-Lenz and Maxwell laws to articulate the relationship between electric and magnetic fields.
- Describe how magnetism is produced and list exampleswhere its effects are observed.
- Apply Kirchhoff's rules to analyze AC circuits consisting of parallel and/or series combinations of voltage sources and resistors and to describe the graphical relationship of resistance, capacitor and inductor.
- Apply various network theorems such as Superposition,Thevenin, Norton, Reciprocity, Maximum Power Transfer, etc. and their applications in electronics,electrical circuit analysis, and electrical machines.

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