PHYSICS 2019-2020

SEMESTER – I

MECHANICS

On successful completion of this course students will:

CO1: Understand integration of vectors

CO2: Derive Stoke's , Greens and Gauss theoremsCO3: Understand Collisions in one and two dimensions

CO4: Understand the relation between scattering cross section and impact parameter

CO5: Understand the properties of materials

CO6: Identify and apply the laws of mechanics along with the necessary mathematics for

Solving numerical

CO7: Gain knowledge on Central forces – definition and examples, Conservative nature of

Central forces, Conservative force as a negative gradient of potential energy, Equation

Of motion under acentral force

CO8: Derive Kepler's laws, Coriolis force and its expressions SEMESTER III

SEMESTER II

THERMODYNAMICS

On successful completion of this course students will:

CO1: Gain knowledge in Kinetic theory of gases

CO2: Understand the process of thermal conductivity, viscosity and diffusion in gases

CO3: Understand the nature of thermodynamic properties of matter like internal energy,

Enthalpy, entropy, temperature, pressure and specific volume

CO4: Understand the efficiency of Carnot's engine.

CO5: Understand the significance of first law and second of thermodynamics

CO6: Understand implications of the second law of thermodynamics and limitations placed by

The second law on the performance of thermodynamic systems

CO7: Evaluate entropy changes in a wide range of processes and determine the reversibility or

Irreversibility of a process from such calculations.

CO8: Understand the interrelationship between thermodynamic functions and ability to use

SEMESTER III

ELECTROMAGNETISM :

On successful completion of this course students will:

CO1: Gain Knowledge on the basic concepts of electric and magnetic fields.

CO2: Understand the concept of conductors, dielectrics, inductance and capacitance

CO3: Gain knowledge on the nature of magnetic materials.

CO4: Understand the concept of static and time varying fields.

CO5: Gain knowledge on electromagnetic induction and its applications

CO6: Gain knowledge on EM waves, propagation and their properties.

Such relationships to solve practical problems.

SEMESTER IV

OPTICS

On successful completion of this course students will:

CO1: Gain knowledge on various theories of light

CO2: Acquire skills to identify and apply formulas of optics and wave physics

CO3: Understand the properties of light like reflection, refraction, interference, diffraction etc

CO4: Understand the applications of diffraction and polarization.

CO5: Understand the applications of interference in design and working of interferometers.

CO6: Understand the resolving power of different optical instruments.

CO7: Gain knowledge on working of holography and their applications in various fields.

CO8: Gain knowledge in optical fiber and their applications in communication

SEMESTER V

MODERN PHYSICS

On successful completion of the course, the students will:

CO1: To understand the difference between Atomic and Molecular spectroscopies.

CO2: Understand the intuitive ideas of the Quantum physics and Nuclear physics.

CO3: Derive Schrodinger time dependent and time independent wave equations

CO4: To understand dual nature of matter

SEMESTER VI

Electronics

On sucessful completion of the course,the students will:

Co1:To understand the electronic devices in various experiments

CO2:These are used in Physical activities of the physics.

Co3:To understand the A.C and D.C currents

Co4: Electronics most important role in Physics

PHYSICS

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Central forces, Conservative force as a negative gradient of potential energy, Equation Of motion under acentral

force

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SEMESTER II

WAVES AND OSCILLATIONS

On successful completion of this course students will:

CO1: Understand the concepts of mechanics, acoustics and the properties of matter

CO2: Understand physical characteristics of SHM and obtaining solution of the oscillator Using differential

equations

CO3: Calculate logarithmic decrement relaxation factor and quality factor of a harmonic Oscillator

CO4: Use Lissajous figures to understand simple harmonic vibrations of same frequency and

Different frequencies

CO5: Solve wave equation and understand significance of transverse waves

CO6: Solve wave equation of a longitudinal vibration in bars free at one end and also fixed at Both the ends

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CO7: Obtain boundary conditions of a longitudinal vibration in bars free at one end and also Fixed at both the ends

CO8: Gain knowledge on applications of transverse and longitudinal waves.

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CO6: Understand the resolving power of different optical instruments.

CO7: Gain knowledge on working of holography and their applications in various fields.

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CO4: To understand dual nature of matter.

CO5: Gain knowledge on classification of various crystal systems .Understand the basics of Crystallography, x-ray

diffraction and Superconductivity.

CO6: Students will develop a comprehension of the current basis of broad knowledge in

CO7: Learners will build on a critical thinking, analytical reasoning, and problem solving Skills.