Programme: B.Sc. Physics
Programme Code: TDPH BSH

Programme Specific Outcomes (PSOs) for B.Sc. Physics

Sl. No.	On completing B.Sc. Physics, the student will be able to:
PSO-1	Comprehend physics principles and their applications in the problems of everyday life.
PSO-2	Possess industry-specific skills for the existing industrial jobs, and for developing new technologies.
PSO-3	Understand the advanced methods of scientific inquiry and develop skills for extensive research.
PSO-4	Know mathematical methods so as to assess the advanced theories and provide deductions.
PSO-5	Develop skills for understanding scientific literature and creating scientific communication in the written& through hands on experiment.
PSO-6	Not only stitch a fragmented problem into a complete one, but also create alternate solutions in diverse fields of physical, biological and social sciences.

Course Outcomes (COs): B.Sc. Physics
Semester I
Course Code-PHSH
Paper: H1

Course Title: Mathematical Methods in Physics (Unit-I)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Understand and apply the concepts of vector calculus including various differential operators like Gradient, Divergence, Curl their physical meanings. The idea of vector integration and related theorems like Gauss's divergence theorem, Stoke's theorem and Green's theorem	PSO-1, PSO-4
CO-2	To get brief idea about Orthogonal curvilinear co-ordinate system, unit vectors in such system and various operators like gradient, divergence, curl and Laplacian in different curvilinear co-ordinate systems like Cartesian, spherical polar & cylindrical polar co-ordinates.	PSO-1, PSO-4
CO-3	To deal with eigen value and eigen vectors calculation of a given Matrix, Properties of matrices, Calculation of Inverse of a matrix, Diagonalization of matrix	PSO-4
CO-4	To acquire some idea of Beta and Gamma functions, their properties, inter-relationship, their applications to some problems	PSO-4
CO-5	To apply Fourier series to study the complex nature of a given function	PSO-4

Course Title: Mechanics (Unit-II)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Apply Newton's laws to any physical situation, and deduce its kinematical behaviour, Also use of equation of motion of a particle under time dependent force, resistive force	PSO-1, PSO-3, PSO-4, PSO-6
CO-2	Understand the concepts of moment of inertia & radius of gyration, parallel and perpendicular axes theorem and apply them to industrial and day-to-day life situations	PSO-1, PSO-3, PSO-4
CO-3	To get some idea about the Frame of reference & rotating frame of reference, Coriolis and centrifugal force and to understand various physical phenomena from the point of view of Coriolis force	PSO-1, PSO-6
CO-4	Know about velocity and acceleration in plane polar co-ordinate (radial and transverse components)	PSO-4
CO-5	Get some basic idea of Central force, differential equation of a particle moving under central force, nature of orbit, Deductions of Kepler's laws on planetary motion and their applications	PSO-1, PSO-4

Course Title: General Properties of Matter (Unit-III)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Get some idea about gravitational field and potential, Applications of Gauss's theorem in the calculation of gravitational field in some symmetric cases (spherical & cylindrical), Poisson's and Laplace equations in gravitation and their application.	PSO-1, PSO-3, PSO-4
CO-2	Understand the concepts of elasticity and various kinds of elastic moduli, concept of twisting, bending, and depressions produced in cantilever and double beam. The knowledge so acquired can be utilized to understand the some physical phenomena in daily life.	PSO-1, PSO-3, PSO-4
CO-3	Get the idea of surface tension, surface energy, their relation, meaning of excess pressure, explanation of various common phenomena using this concept, experimental techniques employed for the determination of surface tension	PSO-1, PSO-6
CO-4	An important property of fluid viz. viscosity, Poiseulli's equations, Stoke's law, terminal velocity	PSO-4
CO-5	Get an idea of fluid dynamics, Equation of continuity, Bernoulli's theorem and its applications in a number of cases.	PSO-1, PSO-4

Course Title: Vibrations & Waves (Unit-IV)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Get elementary idea about SHM its differential equation and solution, composition of SHM, Lissajou's figures, damped and forced vibration and their related discussion	PSO-1, PSO-3, PSO-4
CO-2	Application of resonance, Idea about quality factor, sharpness of resonance	PSO-1, PSO-3, PSO-4
CO-3	Various kinds of wave dynamics, longitudinal and standing waves, phase and group velocity	PSO-1, PSO-6
CO-4	To understand how to form the differential equation of transverse vibration in a stretched string	PSO-4
CO-5	To get idea about the theories of plucked, struck and bowed strings	PSO-1, PSO-4
CO-6	Application of acoustics of building, Growth and decay of sound intensity, Idea of reverberation, reverberation time and Sabine's law, Charcateristics of a good auditorium,	PSO-1, PSO-5
CO-7	Analyse the acoustics of a room, large or small; presenceof noise and its elimination.	PSO-2, PSO-3

Course Outcomes (COs): B.Sc. Physics
Semester II
Course Code-PHSH
Paper-H2 A

Course Title: Electrostatics & Magnetostatics (Unit-I)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Get an idea about Gauss's theorem in electrostatics and how to apply the same for symmetric charge distribution problem to find the electric field intensity	PSO-1, PSO-3, PSO-4
CO-2	Know about Coulomb's theorem, mechanical force on a charged surface, energy per unit volume	PSO-1, PSO-3, PSO-4
CO-3	Know how to get potential and electric field using Poisson's and Laplace's equation in spherical and cylindrical charge distribution	PSO-1, PSO-6
CO-4	Get elementary idea about the method of electrical images to the field problem in few cases	PSO-2, PSO-3
CO-5	Get basic idea of working of a capacitor, calculation of capacitance in some cases, idea about the electrometers	PSO-1, PSO-2, PSO-3
CO-6	Understand the dipole-dipole interaction, dielectric medium, polarization and susceptibility	PSO-1, PSO-2, PSO-3
CO-7	Get some elementary idea about various terminology on magnetism like permeability, Hysteresis, Boundary conditions, magnetic circuit etc.	PSO-2, PSO-3

Course Title: Optics (Unit-II)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Understand the basics of Geometrical optics including refraction from spherical surfaces, thin lenses and their combination	PSO-2, PSO-3, PSO-4
CO-2	Get an idea about the various kinds of Cardinal points	PSO-2, PSO-3, PSO-5
CO-3	Know about various types of aberration like spherical and chromatic aberrations and their remedies	PSO-2, PSO-3
CO-4	Get a preliminary idea about the wave theory of light including the interference of light & Young's experiment	PSO-2, PSO-3
CO-5	Understand the various kinds of interference demonstrative experiments, related numerical problems	PSO-1, PSO-2, PSO-3
CO-6	Generate some idea about both the Fresnel and Fraunhofer class of diffraction, Zone plate	PSO-1, PSO-2, PSO-3
CO-7	Get idea of limit of resolution and resolving power, How to calculate the resolving power of grating, prism, microscope and telescope	PSO-2, PSO-3
CO-8	Know about the phenomenon of polarization and how to form different polarised light, idea of compensator, optical activity	PSO-2, PSO-3

Course Code-H2 B (PRACTICAL): NON-ELECTRICAL

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Know how to determine experimentally the thermal conductivity of a bad conductor using Lees and Choltron's method	PSO-5
CO-2	Determine the coefficient of viscosity of a given liquid (Poiseulli's method) using experimental techniques	PSO-5
CO-3	Generate extensive idea about the various terminology of spectrometer, labelling and adjustment of a spectrometer, Use of spectrometer, experimental determination of dispersive power of material of prism, study of angle of deviation versus wavelength curve etc.	PSO-5
CO-4	Get acquainted to illustrate the phenomenon like polarization and optical activity. Using these concepts, ability will be attained to determine the unknown concentration of an optically active substance by a polarimeter	PSO-5
CO-5	Understand the phenomenon of diffraction of light (Fraunhofer diffraction) and use that theoretical concept to determine the slit width and the separation between the slits of a double slit.	PSO-5

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Course Outcomes (COs): B.Sc. Physics
Semester III
Course Code-PHSH
Paper-H3 A
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Course Title: Current Electricity (Unit-I)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Apply Kirchhoff's laws and analyse the electrical circuits.	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Apply Thevenine's, Norton's, Superposition and Maximum Power Transfer theorem	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Understand the inadequacy of Wheatstone's bridge, Working principle of Platinum resistance thermometer, Callendar & Griffith Bridge and how to measure the boiling point of a given liquid	PSO-1, PSO-2, PSO-3
CO-4	Understand the Working principle of potentiometer and its applications in a number of cases	PSO-1, PSO-2, PSO-3
CO-5	Understand the various theories behind some thermoelectric phenomena, Inter-relation, thermoelectric power, applications of thermo-couple	PSO-1, PSO-2, PSO-3
CO-6	Analyse the detailed theory behind the working of moving coil dead beat and ballistic types of galvanometers and correction due to damping	PSO-1, PSO-2, PSO-3
CO-7	Understand the phenomenon *electromagnetic induction*, Calculation of self and mutual inductances in a number of cases, Eddy currents and their applications in daily life	PSO-1, PSO-2, PSO-3, PSO-4, PSO-5
CO-8	Understand the basics behind the charging and discharging of a capacitor in a series LCR circuit considering various conditions	PSO-1, PSO-2, PSO-3
CO-9	Analyse AC circuits with circuit elements and their combinations, theory of transformer and its applications	PSO-1, PSO-2, PSO-3, PSO-4

Course Title: Thermal Physics (Thermodynamics, Radiation, Kinetic Theory of Gases, Transport Phenomenon and Refrigeration) (Unit-II)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Understand the basic concepts of thermodynamics such as state variables, state of a system, work done and internal energy.	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Apply the laws of thermodynamics in various processes / systems (in day-to-day phenomena) to calculate the work done/ internal energy	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Analyse the performance of heat engines, refrigerators, and their components using the first law of thermodynamics.Role of p-V diagram to calculate the efficiency of Carnot's engine, Limitations of first law of thermodynamics	PSO-1, PSO-2, PSO-3
CO-4	Understand Carnot's theorem and Absolute scale of temperature, concept of entropy and change of entropy, calculation of the change of entropy in a number of cases`	PSO-1, PSO-2, PSO-3
CO-5	Analyse Maxwell's thermodynamical relations in deriving a number of	PSO-1, PSO-2,

	thermodynamical relations	PSO-3
CO-6	Elaborate the idea of emissive and absorptive power, Kirchhoff's law, Black Body radiation, Different laws to interpret the black body radiation curve	PSO-1, PSO-2, PSO-3
CO-7	Understand kinetic theory of gases, Maxwell's distribution law, different types of velocities, collision probability, mean free path, degrees of freedom, inter-relation	PSO-1, PSO-2, PSO-3, PSO-4, PSO-5
CO-8	Analyse the various transport phenomena like viscosity and thermal conductivity and their relation, Brownian motion	PSO-1, PSO-2, PSO-3

Course Code-H3 B (PRACTICAL): ELECTRICAL

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Build the circuit connections to prepare 1 Ohm Coil, to study thermoelectric curve and hence to determine thermoelectric power, boiling point of a given liquid, high resistance by leakage method, mutual inductance between two coils, construction of rectifier circuits	PSO-5

Course Outcomes (COs): B.Sc. Physics
Semester IV
Course Code-PHSH
PAPER-H4-A

Course Title: Mechanics-II & Relativity (Unit-I)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Understand the basic concepts of Rigid body dynamics, angular momentum of a rigid body, Understand the fundamental concept of moment of inertia andinertia tensor of a rigid body.	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Apply the above-mentioned concepts to understand the ellipsoid of inertia Apply critical thinking skills to describe the motion of the rigid body about its principal axis.	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Get an idea about inertia tensor, principle axis in simple symmetric cases, Apply the theories learnt and the skills acquired to solve real time problems, both analytically and computationally.	PSO-1, PSO-2, PSO-3
CO-4	Understand the idea of generalized coordinates, definition of constraints, forces of constraints and degrees of freedom.	PSO-1, PSO-2, PSO-3
CO-5	Apply the idea generalized co-ordinates and the concept of constraints in different cases, idea of generalized velocity, potential and forces	PSO-1, PSO-2, PSO-3
CO-6	Analyse the Lagrangian formulation and its superiority over Newtonian mechanics, the idea of virtual work, D'Alembert's principle	PSO-1, PSO-2, PSO-3
CO-7	Apply Lagrange's formulation to understand complex mechanical systems and solve quantitative problems in applied physics.	PSO-1, PSO-2, PSO-3, PSO-4, PSO-5
CO-8	Analyse the Hamiltonian formulation and its advantages, computation techniques of Hamiltonian in some simple cases.	PSO-1, PSO-2, PSO-3
CO-9	Apply the concepts of special theory of relativity to the various physical phenomena, and understand its significance.	PSO-1, PSO-2, PSO-3, PSO-4, PSO-5
CO-10	Get a detailed idea of Michaelson –Morley's experiment and its necessity, postulates of special theory of relativity, Idea of Lorentz's transformation, relativity of simultaneity length contraction and time dilation, addition of velocities, variation of mass with velocities, equivalence of mass and energy	PSO-1, PSO-2, PSO-3

Course Title: Electromagnetism and Electromagnetic Theory (Unit-II)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Apply Biot-Savart's law and Ampere's circuital law to find the magnetic field intensity in various symmetric cases	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Idea of Lorentz's force and concept of magnetic induction, non-existence of magnetic monopole	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Idea of magnetic vector potential and magnetic induction in simple cases	PSO-1, PSO-2, PSO-3

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CO-4	Analyse the importance of existence of displacement current, Idea of Maxwell's electromagnetic induction, propagation of plain electromagnetic waves in free space	PSO-1, PSO-2, PSO-3
CO-5	Generate some idea electromagnetic waves in free spaces, transverse character	PSO-1, PSO-2, PSO-3
CO-6	To analyse the transverse character and polarized electromagnetic wave, calculation of Poynting vector and Poynting's theorem, Importance of Hertz's experiment	PSO-1, PSO-2, PSO-3
CO-7	To calculate reflection and refraction co-efficient of plane wave at the boundary of two dielectrics , waves in conducting media, idea of skin effect and skin depth	PSO-1, PSO-2, PSO-3, PSO-4, PSO-5
CO-8	Get an elaborate idea normal and anomalous dispersion, Cauchy and Sellemier equation	PSO-1, PSO-2, PSO-3

Course Code-PHSH

PAPER-H4-B
PRACTICAL (COMPUTER PROGRAMMING ON BASIC/FORTRAN)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Understand foundation concepts of information and information processing in computer systems: a matter of information, data representation, coding systems	PSO-5
CO-2	Understandof an algorithm and its definition.	PSO-5
CO-3	Understand of programming language syntax and its definition by example of BASIC language.	PSO-5
CO-4	Know of basic principles of imperative and structural programming,	PSO-5
CO-5	Writesimple programs in BASIC language by using basic control structures (conditional statements, loops, branching, etc.).	PSO-5
CO-6	Create a programmable model for a problem given. Basic knowledge of working with arrays in BASIC language. Handle possible errors during program execution. Elementary knowledge of programming code style.	PSO-5

Course Outcomes (COs): B.Sc. Physics
Semester V
Course Code-PHSH
Paper-H5

Course Title: Mathematical Methods in Physics –II (Unit-I)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Understand the 1st and 2nd order ordinary linear differential equations, and solve these equations using different methods especially by the method of separation of variables.	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Get a comprehensive idea about the various method employed for series solution of a differential equations like Legendre, Hermite and Laguerre's equation, idea about their orthogonality conditions and recurrence relation will be also developed.	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Analyse the complex variables and functions of a complex variable, continuity and differentiability, singular points, removable, essential and isolated singularities	PSO-1, PSO-2, PSO-3
CO-4	Get some idea about the branch cut and branch points, Riemann sheet and Riemann surface, single and multi-valued function, idea of complex plane	PSO-1, PSO-2, PSO-3
CO-5	Develop the necessary and sufficient condition for a function to be analytic in nature (Cauchy Riemann Conditions), Harmonic function.	PSO-1, PSO-2, PSO-3
CO-6	Develop the understand the special type of integral transform like Laplace transform, its properties and Laplace's transform for different cases	PSO-1, PSO-2, PSO-3

Course Title: Atomic and Molecular Physics, Laser & Fiber Optics (Unit-II)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Analyse the spectrum of hydrogen atom with reduced mass correction, its advantages, computation of magnetic moment of orbital electron and related discussion	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Know about the importance of introducing the idea of Vector atom model, consequences of Stern Gerlach experiment to establish the idea of electron spin	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Analyse the meaning and requirements of L-S and j-j coupling schemes, Lande-g-factor and its expression	PSO-1, PSO-2, PSO-3
CO-4	Explain the doublet structure in the spectra of alkali atom,	PSO-1, PSO-2, PSO-3
CO-5	Explain the phenomenon like normal and anomalous Zeeman effect using the quantum theory, they will be able to conclude about the number of lines to be obtained in normal and anomalous Zeeman effect for a given transition	PSO-1, PSO-2, PSO-3
CO-6	Get some elementary about the various kinds of energies those need to	PSO-1, PSO-2,

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		PSO-3
	be addressed while studying the molecular spectra, Analyse vibrational, rotational and electronic spectra of diatomic molecules	
CO-7	Compute the Compton shift considering the energy and momentum conservation laws	PSO-1, PSO-2
CO-8	Analyse the concept laser action, conditions required, Einstein's A, B co-efficients, detailed idea of 3-and 4-level laser system and their working, basic principle of holography	PSO-1, PSO-2, PSO-3
CO-9	Get some elementary idea about the optical fibre, its type, various terminology	PSO-1, PSO-2, PSO-3

Course Title: Electronics (Unit-III)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Understand the working, characteristics and applications of semiconductor diodes, idea of clipper and clamper	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Analyse the working of PNP and NPN transistor, current components in a junction transistor CB, CE and CC configurations of transistor and their comparison.	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Know about the working of a CE transistor amplifier, hybrid parameters,	PSO-1, PSO-2, PSO-3
CO-4	Recollect different types of biasing methods for transistor.	PSO-1, PSO-2, PSO-3
CO-5	Understand the construction, working and industrial applications of FETs,	PSO-1, PSO-2, PSO-3
CO-6	Understand Operational amplifier, concept of virtual ground, applications of OP-AMPs.	PSO-1, PSO-2, PSO-3
CO-7	Generate some idea of feedback amplifier and its working, various types of oscillators	PSO-1, PSO-2
CO-8	Idea of principle of radio transmission and reception using block diagrams	PSO-1, PSO-2, PSO-3
CO-9	Get detailed idea about the role of ionosphere in radio wave propagation	PSO-1, PSO-2, PSO-3

Course Title: Statistical Mechanics (Unit-IV)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Explain statistical physics and thermodynamics as logical consequences of the postulates of statistical mechanics.	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Remember and describe micro and macro states	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Analyse the differences in micro-canonical, macro-canonical and grand canonical ensembles.	PSO-1, PSO-2, PSO-3
CO-4	Analyse the phase transition of different systems.	PSO-1, PSO-2,

		PSO-3
CO-5	Distinguish between different types of particles, and understand particle statistics.	PSO-1, PSO-2, PSO-3
CO-6	Distribute classical particles, bosons and fermions among energy levels.	PSO-1, PSO-2, PSO-3

Paper-H6
(PRACTICAL: NON-ELECTRONICS)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Investigate the working of LCR circuit, Anderson's bridge,	PSO-5
CO-2	Use the concept of diffraction in a grating to determine lines per cm and wavelength of unknown radiation, Using the idea of interference in Fresnel Biprism how one can determine the wavelength of unknown radiation	PSO-5
CO-3	Determine experimentally the mechanical equivalent of heat and study the B-H loop for a ferromagnetic specimen	PSO-5

Course Outcomes (COs): B.Sc. Physics
Semester VI
Course Code-PHSH
Paper-H7

Course Title: Nuclear Physics (Unit-I)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Understand different properties of the nucleus, bindingenergy,and the measurements of the size of the nucleus.	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Analyse the concept of Q-equation in different nuclear reactions, and understand the radioactive decay of alpha, beta and gamma rays, and their fine structure spectra.	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Analyse different nuclear models, viz., liquid drop model and shell model, and their applications.	PSO-1, PSO-2, PSO-3
CO-4	Understand generation of nuclear energy by nuclear fission and nuclear fusion processes; designing different types of fission and fusion reactors	PSO-1, PSO-2, PSO-3
CO-5	Design and analyse various nuclear detectors and their applications.	PSO-1, PSO-2, PSO-3
CO-6	Understand the concept of nuclear force, design different types of accelerators for production of elementary particles, and analyse different properties of elementary particles based on the Quark Model	PSO-1, PSO-2, PSO-3

Course Title: Quantum Mechanics (Unit-II)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Understand physical situations where classical physics fails, and how quantum concepts explain it.	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Understand the mathematical basis of quantum theory and concept of probabilistic approach.	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Understand the concept of quantization and discrete energy states.	PSO-1, PSO-2, PSO-3
CO-4	Apply the quantum theory to many idealistic situations and solve problems.	PSO-1, PSO-2, PSO-3
CO-5	Apply quantum theory and perform mathematical analysis of more complicated systems	PSO-1, PSO-2, PSO-3
CO-6	Apply quantum theory to a real world example of hydrogen atom and look at limitations of the quantum theory.	PSO-1, PSO-2, PSO-3

Course Title: Condensed Matter Physics (Unit-III)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Understand crystal structures, crystal planes and directions, and Miller indices.	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Understand Bragg's law and methods of crystal structure determination.	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Understand free electron gas model and band model (Kronig Penney model).	PSO-1, PSO-2, PSO-3
CO-4	Apply the band theory to understand the motion of charge carriers in solids.	PSO-1, PSO-2, PSO-3
CO-5	Understand the concepts of magnetization and origin of magnetism in an atom, and differentiate between dia, para and ferromagnetic materials.	PSO-1, PSO-2, PSO-3
CO-6	Understand the quantum theory of dia, para and ferromagnetic materials.	PSO-1, PSO-2, PSO-3

Course Title: Digital Electronics, Computer (Unit-IV)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Get basic idea about digital electronics like binary and decimal number system, their inter-conversion, binary addition and subtraction, Boolean algebra	PSO-1, PSO-2, PSO-3, PSO-4
CO-2	Understand the working of various logic gates like AND, OR and NOT gates using discrete components	PSO-1, PSO-2, PSO-3, PSO-4
CO-3	Understand the working of various combinational circuits adder and subtractor, multiplexer, flip-flops	PSO-1, PSO-2, PSO-3
CO-4	Generate the idea of different operating systems, idea of simple MS-DOS commands	PSO-1, PSO-2, PSO-3
CO-5	Get some elementary idea about flow-chart, algorithm, programming using BASIC.	PSO-1, PSO-2, PSO-3
CO-6	Idea about different BASIC commands.	PSO-1, PSO-2, PSO-3

Paper-H8
(PRACTICAL: ELECTRONICS)

Sl. No.	On completing the course, the student will be able to:	PSOs addressed
CO-1	Investigate the working of triode and to determine the voltage gain, working of a transistor (its input and output characteristics), characteristics of Zener diode and study of line and load regulation	PSO-5
CO-2	Investigate the working of static, dynamic and transfer characteristics	PSO-5

	of FET	
CO-3	Construct half and full wave rectifier with and without R-C filter	PSO-5
CO-4	Study of operational amplifier (IC-741)	PSO-5
CO-6	Design the logic circuits like OR, AND & NOT circuit using discrete components, Boolean expression and realization of relevant truth tables	PSO-5