Session: 2022-2023 (Even Semester)
Lesson Plan

Name of the Teacher: Ms Sujata , ASSISTANT PROFESSOR
Subject: PHYSICS (Theory)   **Class:** B. Sc. 2nd Sem.
Physics Paper: I(Properties of Matter and Kinetic Theory of Gases)
Paper's Code: PHY02A
Max. Marks: 50(External Assessment: 40 Marks, Internal Assessment: 10 Marks)
Contact Hours Per Week: 5
Physics Paper:II (Semiconductor Devices)
Paper's Code: PHY02B
Max. Marks: 50(External Assessment: 40 Marks, Internal Assessment: 10 Marks)
Contact Hours Per Week: 5

Sr. No.	Week	Dates	Topic
1	1st	20-02-2023 to 25-02-2023	Rotation of rigid body, Moment of inertial, Torque, angular momentum, Kinetic Energy of rotation. Theorem of perpendicular and parallel axes (with proof), Moment of inertia of solid sphere, hollow sphere,
2	2nd	27-02-2023 to 04-03-2023	spherical shell, solid cylinder, hollow cylinder Moment of inertia of solid bar of rectangular cross–section, Fly wheel, Moment of inertia of an irregular body, Acceleration of a body rolling down on an inclined plane,
3	3rd	06-03-2023 to 11-03-2023	Elasticity, Stress and Strain, Hook's law, Elastic constant and their relations, Poisson's ratio, Torsion of cylinder and twisting couple
4	4th	13-03-2023 to 18-03-2023	Determination of coefficient of modulus of rigidity for the material of wire by Maxwell's needle, Bending of beam (Bending moment and its magnitude) Cantilever and Centrally loaded beam, Determination of Young's modulus for the material of the beam,
5	5th	20-03-2023 to 25-03-2023	Elastic constants for the material of the wire by Searle's method. Assumption of Kinetic theory of gases, pressure of an ideal gas (with derivation), Kinetic interpretation of Temperature, Ideal Gas equation, Degree of freedomClass test
6	6th	27-03-2023 to 01-04-2023	Law of equipartition of energy and its application for specific heat of gases, Real gases, Vander wall's equation, Brownian motion (Qualitative), Maxwell's distribution of speed and velocities (derivation required)
7	7th	03-04-2023 to 08-04-2023	Experimental verification of Maxwell's law of speed distribution: most probable speed, average and r.m.s. speed, Mean free path, Transport of energy and momentum, Diffusion of gases Class test
8	8th	10-04-2023 to 15-04-2023	Energy bands in solids, Intrinsic and extrinsic semiconductors, carrier mobility and electrical resistivity of semiconductors, Hall effect, p-n junction diode and their characteristics, Zener and
9	9th	17-04-2023 to 22-04-2023	Avalanche breakdown, Zener diode, Zener diode as a voltage regulator. Light emitting diodes (LED)

Sr. No.	Week	Dates	Topic
10	10th	24-04-2023 to 29-04-2023	Photoconduction in semiconductors, Photodiode, Solar Cell, p-n junction as a rectifier, half wave and full wave rectifiers (with derivation),Filters (series inductor, shunt capacitance, L-section or choke, π and R.C. filter circuits), Junction transistors, Working of NPN and PNP transistors,
11	11th	01-05-2023 to 06-05-2023	Three configurations of transistor (C-B, C-E, C-C modes), Common base, common emitter and common collector characteristics of transistor,Constants of a transistor and their relation, Advantages and disadvantages of C-E configuration. D.C. load line.
12	12th	08-05-2023 to 13-05-2023	Transistor biasing; various methods of transistor biasing and stabilization.Amplifiers, Classification of amplifiers, common base and common emitter amplifiers, coupling of amplifiers various methods of coupling Resistance- Capacitance (RC) coupled amplifier (two stage, concept of band width, no derivation), Class test
13	13th	15-05-2023 to 19-05-2023	Feedback in amplifiers, advantages of negative feedback, Emitter follower, distortion in amplifiers, Oscillators, Principle of oscillation, classification of oscillators, Condition for self-sustained oscillation: Barkhausen criterion for oscillation, Tuned collector common emitter oscillator, Hartley oscillator, C.R.O. (Principle and Working). Class test
14	14th	20-05-2023 onwards	Revision