**LESSON PLAN OF KINETIC THEORY**

COLLEGE NAME:- GOVERNMENT COLLEGE SATNALI (MAHENDERGARH)

ACADEMIC SESSION:- 2023-24

SEMESTER:- B.Sc. NON MEDICAL 2nd SEM SEC B

TEACHER NAME:- Smt. Sapna

SUBJECT:- PROPERTIES OF MATTER, KINETIC THEORY AND RELATIVITY

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| **15 FEBRUARY – 28 FEBRUARY**  **UNIT -1 –** Properties of Matter (Elasticity) : Elasticity, Hooke’s law, Elastic constants and their relations, Poisson’s ratio, torsion of cylinder and twisting couple. Bending of beam (bending moment and its magnitude) cantilevers, Centrally loaded beam. |
| **1 MARCH- 15 MARCH**  **UNIT -2 –** Kinetic Theory of Gases : Assumptions of Kinetic Theory of gases, Law of equipartition of energy and its applications for specific heats of gases. Maxwell distribution of speeds and velocities (derivation required) |
| **16 MARCH- 25 MARCH**  **UNIT -2 –** Experiomental 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.. |
| **26 MARCH- 10 APRIL**  **UNIT -2** Brownian motion (qualitative), Real gases, Van der Waal’s equation  **UNIT -3.** Theory of Relativity : Reference systems, inertial frames, Gallilean invariance and Conservation laws |
| **11 APRIL -15 APRIL**  Newtonian relativity principle,Michelson - Morley experiment : Search for ether. Lorentz transformations length contraction, time dilation |
| **15 APRIL - 25 APRIL**  velocity addition theorem ,variation of mass with velocity and mass energy equivalence |
| **LESSON PLAN OF ELECTRONIC DEVICES**  COLLEGE NAME:- GOVERNMENT COLLEGE SATNALI (MAHENDERGARH)  ACADEMIC SESSION:- 2023-24  SEMESTER:- B.Sc. NON MEDICAL 2nd SEM SEC B  TEACHER NAME:- Smt. Sapna  SUBJECT:- ELECTRONIC DEVICES   |  | | --- | | **15 FEBRUARY – 28 FEBRUARY**  **UNIT -1 – Electromagnetic Induction:-**  Growth and decay of current in a circuit with (a) capacitance and resistance (b) resistance and inductance (c) capacitance and inductance | | **1 MARCH- 15 MARCH**  **UNIT -1 – Electromagnetic Induction:-**  (d) capacitance, inductance and resistance  AC circuit analysis using complex variables with (a) capacitance and resistance (b) resistance and inductance (c) capacitance and inductance (d) capacitance, inductance and resistance | | **16 MARCH- 25 MARCH**  **UNIT -1 – Electromagnetic Induction:-**  Series and parallel resonance circuit,(Quality factor)Sharpness of resonance  **UNIT -2. –Semiconductor Diodes:-**  Energy bands in solids, Intrinsic and extrinsic semiconductor, Hall effect | | **26 MARCH- 10 APRIL**  **UNIT -2. Semiconductor Diodes:-** P-N junction diode and their V-I characteristics. Zener and avalanche breakdown.  Resistance of a diode, Light emitting diode (LED),Photo conduction in semiconductor, Photo diode , solar sell  **Diode Rectifiers :-** P-N junction half wave and full wave rectifiers, Type of filter circuits, Zener diode as voltage regulator, simple regulated power supply. | | **11 APRIL -15 APRIL**  **Transistors:-** Junction transistor, Bipolar transistors, working of NPN and PNP transistors, Transistor connections, constants of Transistor, Transistor characteristics curve (excluding h parameter analysis), advantage of C-B configuration, C.R.O. (Principle, working and construction in detail) | | **15 APRIL - 25 APRIL**  **Unit 3 :- Transistor amplifiers:-** Transistor biasing, method of transistor biasing and stabilization, D.C. load line, common base and common emitter transistor biasing, common base and common emitter amplifier, classification of amplifier, R-C coupled amplifier, Feedback in amplifier, advantage of negative feedback emitter follower  **Oscillator:-** Oscillators, Principle of oscillation , classification of oscillator, condition of self sustained oscillation : Barkhousen criterion for oscillations, Tuned collector common emitter oscillator, Hartley oscillator, colpitt’s oscillator | |