Dr. B.R. Ambedkar Govt. College, Palwal
Lesson plan 2021-2022

Name of Extension Lecturer: **Om Prakash**
Class and section: **B.Sc 1st Year (2nd Sem)**
Subject: **Physics paper 1st(Properties of matter, kinetic theory and relativity)**

Week 1
Unit 1: Properties of matter (Elasticity)
• Elasticity • Hooks law • Elastic constants

Week 2
• Elastic constant and their relations • Poisson's Ratio • Torsion of cylinder and twisting couple

Week 3
• Bending of Beam Bending moment and its magnitude limitations of simple theory of bending • Cantilever loaded at the free end • Depression of a centrally loaded beam supported at its end

Week 4
• Depression of uniformly loaded beam at its middle point • Relation between Y, η and σ

Week 5
Unit 2nd:Kinetic theory of gases
• Assumptions of kinetic theory of gases • Law of equi-partition of energy • Its application for specific heat of gases

Week 6
Assignment-I

- Maxwell distribution of speeds
- Maxwell distribution of velocity
- Experimental verification of Maxwell law of speed distribution:
  -Most probable speed
  -Average and r.m.s. speed

Week 7

- Mean free path
- Transport of energy
- Momentum

Week 8

- Diffusion of gases
- Diffusion of Mass
- Brownian motion

Week 9

- Einstein's theory of the translation Brownian motion
- Vander walls equation of state for real gases
- Defect of Vander walls equation

Week 10

- Explanation of derivation by Vander wall equation
- Derivation of real gas behavior from that of an ideal gas

Class Test

Week 11

Unit 3rd

- Definitions
- Reference system
- Frame of reference
- Inertial frame of reference

Week 12

Assignment-II

- Galilean invariance
- Conservation laws according to Galilean transformations
- Newtonian relativity principle

Week 13
• Michelson and Morley experiment • Search for eather • Lorentz transformation

Week 14
• Length contraction on the basis of Lorentz transformation • Time dilation on the basis of Lorentz transformation • velocity addition theorem, variation of mass with velocity on the basis of Lorentz transformation