***KARIM CITY COLLEGE***

***DEPARTMENT OF PHYSICS***

**GIST OF THE PORTIONS OF THE SYLLABUS COVERED BY**

**Prof. D. K. Singh**

**SEMESTER - 1**

**SESSION :- 2017 – 2018**

**Oscillations:**

Simple harmonic motion. Differential equation of SHM and its solutions. Kinetic and Potential Energy, Total Energy and their time averages. Damped oscillations.

**Elasticity:**

1. Hooke’s law - Stress-strain diagram - Elastic moduli.-Relation between elastic constants - Poisson’s Ratio-Expression for Poisson’s ratio in terms of elastic constants .
2. Work done in stretching and work done in twisting a wire .Twisting couple on a cylinder .

Determination of Rigidity modulus by static torsion .

1. Torsional pendulum-Determination of Rigidity modulus and moment of inertia - q, *η* and σ by Searles method.

**Speed Theory of Relativity:** Constancy of speed of light. Postulates of Special Theory of

Relativity. Length contraction. Time dilation. Relativistic addition of velocity.