***KARIM CITY COLLEGE***

***DEPARTMENT OF PHYSICS***

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

**Prof. Asghar Khan**

**SEMESTER - 1**

**SESSION :- 2017 – 2018**

**Vectors:**

Vector algebra. Scalar and vector products. Derivatives of a vector with respect to a parameter.

**Ordinary Differential Equations:**

1st order homogeneous differential equations. 2nd order homogeneous differential equations with constant coefficients.

**Laws of Motion:** Frames of reference. Newton’s Laws of motion. Dynamics of a system of particles. Centre of Mass.

**Momentum and Energy:** Conservation of momentum. Work and energy Motion of rockets.

**Rotational Motion:** Angular velocity and angular momentum. Torque. Conservation of

angular momentum.

**Gravitation:** Newton’s Law of Gravitation. Motion of a particle in a central field. Kepler’s

Laws . Satellite in circular orbit and applications. Geosynchronous orbits. GPS, Weightlessness. Physiological effects on astronauts.