



### Rite on one of the following object

- (1) The free and constrained systems, Holonomic and non-holonomic system, the motion of a rigid body passing an axis of symmetry rotating about a fixed point in space and in the rigid body itself.
- (2) Stationary and non-stationary system, virtual and real displacements, the motion of a rigid body rotating about its centroid  $G$  as a fixed point in space and in the rigid body itself.
- (3) The free and constrained systems , Stationary and non-stationary system, the LaGrange equations for the motion of a holonomic system of  $n$  generalized coordinates with some of examples
- (4) Eulerian angles, Holonomic and non-holonomic system, the motion of a rigid body rotating about a fixed point  $O$  under the action of its weight ( $mg$ ).
- (5) Holonomic and non-holonomic system, thee generalized coordinates, the virtual work and generalized forces acceleration, the motion of a rigid body passing an axis of symmetry rotating about a fixed point in space and in the rigid body itself
- (6) Eulerian angles, then give some of examples that shows how to use it in the Solution, The free and constrained systems , virtual and real displacements.
- (7) The free and constrained systems, virtual and real displacements, the LaGrange equations for the motion of a holonomic system of  $n$  generalized coordinates with some of examples
- (8) Eulerian angles, virtual and real displacements, thee generalized coordinates, the motion of a rigid body rotating about a fixed point  $O$  under the action of its weight ( $mg$ ).
- (9) Eulerian angles, Holonomic and non-holonomic system,, the motion of a rigid body rotating about its centroid  $G$  as a fixed point in space and in the rigid body itself

