The questions below for the oral exam are not an exhaustive list but are just a few examples:

Natural Reference Systems
Frenet formulas
Kinematics and dynamics of rigid motions
Euler's angles
Inertia tensor and its properties
Konig's theorem
Pure rolling motions in mechanics
Theory of holonomic, smooth and bilateral constraints
Lagrange equations
Generalized Potential Theory and applications
First integrals
Configuration space
Space tangent to a trajectory in the configuration space
Lagrangian systems
Trajectory deformations considering non-fixed extremes and non-synchronous trajectories
Hamilton functional and Hamilton principle
Gauge invariance of the first variation of Hamilton functional, applications
Functional Action, Isoenergetic Deformations and Maupertuis Principle of Least Action.
Geodesics and applications
Brachistocrona theory
Connection between the Principle of Least Action and Fermat's Principle
Symmetries and conservation laws, Noether's theorem.
Phase space, Hamilton equations and applications.
Canonical transformations and application examples
Hamilton-Jacobi theory and application examples
Poisson brackets and connection with the computation of prime integrals
Poisson's parenthesis and connection with canonical transformations
Two-body problem
Variational principles in the theory of electromagnetic fields in the space of events