The general scope of issues and topics required for the entrance exam for a master's degree in

Materials Science, specialty Materials Engineering

* Elements and their properties, acids, bases, salts, chemical reactions, redox reactions,
* fundamentals of quantum mechanics, mass and heat transport, defects, corrosion, chemical
* reactions in solids, solid state electrochemistry.
* Periodic structures: symmetry, group theory, point and space groups.
* Inorganic, metallic, amorphous, polymeric, organic and composite materials, nanomaterials:
* structure, microstructure, bonding, optical, magnetic and elastic properties.
* Technology of materials: synthesis, sintering, solidification, polymerization.
* Materials characterization methods: XRD, SEM-EDS, spectroscopic methods, electrochemical
* methods.
* Calculus, statistics.
* Computer science basics: data structures, data transformation, representation and
* visualization, algorithms, internet, protocols and standards