

**DEPARTEMENT OF METALLURGICAL & MATERIALS ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL
P. O. SRINIVASNAGAR - 575 025, KARNATAKA, INDIA.**

List of candidates shortlisted for written test/interview for admission to M.Tech.(Research) Programme 2022-23.

Sl. No.	Name Reference	Number	Branch/Specialisation
1	Kosuru Abhiram	MTR2022NT0016	Nanotechnology

Place of Reporting: Office, Dept. of Metallurgical and Materials Engineering @ 9.45 AM

Written Test Date and Time: December 13, 2022 @ 10.00 AM

Interview Date and Time: December 13, 2022 @ 2.00 PM

Instructions:

1. Candidate is required to bring all the original supporting documents, such as mark/grade cards, degree certificates, GATE score card, caste Certificate (for OBC/SC/ ST candidates), PWD certificate (for PWD candidates), and other relevant documents such as sponsorship certificate, experience certificate. In the absence of originals of the above-mentioned documents, your candidature may be cancelled.
2. Reprints of research-papers/patents, if any, may be provided.
3. No Objection Certificate (NOC) from the present employer is mandatory for sponsored candidates.
4. Candidate is required to make own arrangements for travel and accommodation.

Syllabus for written test:

Foundations of Materials Science and Engineering

The electronic structure of atoms; Types of atomic and molecular bonds; ionic bonding; covalent bonding; metallic bonding; secondary bonding; mixed bonding; hybridization; Energy bands in metals, insulators and semiconductors; Basic crystallography; Defects and dislocations; Laws of thermodynamics; heat capacity; entropy; free energy; Types of Materials: Polymers, metals and alloys, semiconductors, ceramics, composites; Diffusion; Phase rule and phase diagrams; Properties: optical, magnetic, mechanical, electrical, thermal; Corrosion and material degradation; Characterization tools: XRD, SEM, TEM, DSC, TGA, basics of spectroscopy.

References

1. W.D. Callister Jr, Materials Science and Engineering, Wiley, 2006.
2. W.F. Smith et al, Materials Science and Engineering, Tata McGraw Hill, 2008.
3. D.R. Askeland, W. J. Wright, Essentials of Materials Science and Engineering, Cengage, 2013.
4. V. Raghavan, Materials Science and Engineering: a First Course, PHI, 2011.

Sd/-

Head, Dept. of MME