

Dept. Water Resources & Ocean Engineering

(Formerly Dept. of Applied Mechanics & Hydraulics)

NITK, Surathkal, Mangalore, Pin: 575 025

M.Tech. (Self- financed PG Programmes 2021-2022)

Applicants shortlisted to attend the Technical Written Test and Technical Interview

Ref No.: WROE/NITK/Self-Financing M.Tech. Programme/ Shortlisted Applicants Date: 23-08-2021

Sl. No.	Reference Number	NAME OF THE APPLICANT
1	MT2021GF0001	GOHIL JIKEN ASHVINKUMAR
2	MT2021MS0002, MT2021WR0005	AISHWARYA VIPIN
3	MT2021WR0004	PALLA PAVAN KUMAR
4	MT2021WR0006	MANOJKUMAR R SAJJANSHETTAR
5	MT2021WR0011	VENILLA MANIKANTA
6	MT2021WR0003	TUMULA TIRUPATI RAO

Sd/-

HEAD OF THE DEPARTMENT

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General Instructions for the candidates who are appearing for the M.Tech. (Self-financed PG Programmes 2021-2022), Written Aptitude Test & Interview:

1. Syllabus for the written aptitude test is provided in annexure.
2. Mode of the written aptitude test is online. Details of examination will be announced in our Institute's Website (<https://www.nitk.ac.in/>). For any further updates, the candidates are requested to visit our Institute's Website regularly.
3. There will be 30 multiple choice questions (MCQ) for the M.Tech. Written Aptitude Test. For every question, four options will be given. The candidates are expected to select correct option.
4. Each correct answer carries one mark. Total marks for the test is 30.
5. There is negative marking for wrong answer. For each wrong answer, 0.25 marks will be deducted.
6. Question Paper Type: **Sequential**. i.e. There won't be any option to go back and answer either the unattempt questions or change the already answered questions.
7. Only single attempt is possible for your technical written test.
8. Time duration is 45 minutes.
9. The candidates are allowed to use scientific calculators for solving numerical problems.
10. After the written test, shortlisted candidates will be allowed to attend the M.Tech. interview.
11. **Written Test Date and Time:** August 30th 2021, 11.30 AM – 12.15 PM. **No extra time will be given** and your login page will be closed after the test duration.
12. **Interview Date and Time:** August 31st 2021, 10.45 AM Onwards through online mode using MS Team /Google Meet Link.

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Annexure

Syllabus for the M.Tech. (Self- Financed Course) Written Aptitude Test

Engineering Mechanics: System of Forces, Free-Body Diagrams, Equilibrium Equations; Internal Forces in Structures; Plane Truss, Second Area Moment.

Solid Mechanics: Bending Moment and Shear Force in Statically Determinate Beams; Simple Stress and Strain Relationships; Simple Bending Theory, Flexural and Shear Stresses, Uniform Torsion, Buckling of Column.

Fluid Mechanics: Properties of Fluids, Fluid Statics; Continuity, Momentum, Energy and Corresponding Equations; Potential Flow, Applications of Momentum and Energy Equations; Laminar and Turbulent Flow; Flow in Pipes, Pipe Networks; Concept of Boundary Layer and its Growth.

Numerical Methods: Accuracy and Precision; Error Analysis. Numerical Solutions of Linear and Non-Linear Algebraic Equations; Least Square Approximation, Newton's and Lagrange Polynomials, Numerical Differentiation, Integration by Trapezoidal and Simpson's rule, Single and Multi-Step Methods for First Order Differential Equations.

Calculus: Functions of Single Variable; Limit, Continuity and Differentiability; Mean Value Theorems, Local Maxima and Minima.

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