विभाग / Department
जल संसाधन एवं महासागर अभियांत्रिकी
Water Resources and Ocean Engineering

राष्ट्रीय प्रौद्योगिकी संस्थान कर्नाटक, सुरत्कल, मंगलूरु-५७५०२५
(राष्ट्रीय महत्व का संस्थान, एनआईटीएसईआर अधिनियम के तहत स्थापित, भारत सरकार)
National Institute of Technology Karnataka, Surathkal, Mangaluru – 575025
(An Institute of National Importance, Established under NITSER Act, Government of India)
दूरभाष / Phone: +91-824-2473650(O), ई-मेल / E-mail: hodwroe@nitk.edu.in
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PAN: AAATN4896K TAN: BLRK02818E

Call Letter List

Ph.D. 2026-27 – Odd Semester

The following applicants have been selected for written exam and interview for the department of Water Resources and Ocean Engineering for Ph.D. Programme.

Sl. No	Application Number	Name of the candidate
1	PH2026WO0019	VANISHRI S JAHAGIRDAR
2	PH2026WO0020	MANIYAMMAI V
3	PH2026WO0025	TEJAS KUMAR R

27/11/26

Head of the Department / HOD
जल.सं. एवं म. अभि विभाग/Dept. of WROE
राष्ट्रीय प्रौद्योगिकी संस्थान कर्नाटक
National Institute of Technology Karnataka
सुरत्कल, मंगलूरु-५७५०२५/Surathkal, Mangaluru-575025
कर्नाटक, भारत / Karnataka, India

Written Test and Interview details:

Written Test Date & Time: 30th November 2026 (Monday) – 2PM to 3PM

Venue: WROE 106- First Floor , Water Resources and Ocean Engineering Department

Interview Date & Time: 30th November 2026 (Monday) – 3.15 PM onwards

Department
जल संसाधन एवं महासागर अभियांत्रिकी
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General Instructions for Ph.D. Written Aptitude Test & Interview

1. There are two parts **(Part A and Part B)** in the Ph.D written aptitude test. The **Part A (Syllabus in Annexure) is compulsory** for all the candidates. In **Part B (Syllabus in Annexure)**, there will be three sections and the candidates have to appear for any one of the sections (**Section 1: Marine Structures / Section 2: Water Resources Engineering / Section 3: Geoinformatics**).

2. In Part B, only one section of the candidate's preference will be evaluated.

3. The mode of the written aptitude test is offline. The details of examination will be announced in our Institute's website (https://www.nitk.ac.in/) and for further updates, the candidates are requested to visit our Institute's Website regularly.

4. There will be **30 Multiple Choice Questions (MCQ)** for the Ph.D. Written Aptitude Test. Four options will be given for every question. The candidates are expected to select the correct option.

5. The total marks for the test is **30**. Each correct answer carries **one mark**.

6. Time duration for the test is **60 minutes**.

7. The candidates are allowed to use scientific calculators for solving numerical problems.

8. The shortlisted candidates will be allowed to attend the technical interview after the written test.

9. The candidates are expected to prepare for a **PowerPoint presentation with a maximum of 10 slides** for the technical interview. The presentation slides should include the present and the proposed research work.

10. **Date and Time of Written Test:** 30th November, 2026 from 02.00 PM- 3.00 PM

11. **Date and Time of Interview:** 30th November 2026, 3:15 PM onwards.

12/11/26

Head of the Department
विभागाध्यक्ष / HOD
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राष्ट्रीय प्रौद्योगिकी संस्थान कर्नाटक
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Annexure: Syllabus for Ph.D. Written Aptitude Test

PART A: (Basic Sciences, Mathematics and Engineering)

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.

PART B: (Appear only in one section of your preference)

Section 1: Marine Structures: Basics of Wave Hydrodynamics, Wave Structure Interactions, Oceanography, Design Aspects of Marine Structures, Port Planning, Marine Geotechnical Engineering.

Section 2: Water Resources Engineering: Hydrologic Cycle, Water Budget, World Water Quantities, Precipitation and Abstractions; Forms of Precipitation; Data Analysis, Rain-Gauge Networks; Infiltration – Processes, Infiltration Indices and Horton's Equation; Evaporation and Evapotranspiration – Pan Evaporation, Empirical Equations for Estimating Evaporation and Evapotranspiration; Transpiration; Runoff and Hydrographs: Rainfall Runoff Relations, Time Area Concept, Flow Duration Curve, Mass Curve, Flow Hydrograph, Unit Hydrograph (UH) and its Analysis.

Section 3: Geoinformatics: Energy Sources & Radiation Principles, EMR & Spectrum, Emission, Transmission, Spectral Response Pattern, Components of GIS, Coordinate System, MAP Projections, Input Data for GIS, Types of Output, Level & Scale, Data Quality, GNSS, Cartography.

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