

Department of Applied Mechanics and Hydraulics, NITK, Surathkal

List of candidates shortlisted for Written Test / Interview for Admission to PhD Programme 2019-20 (December Session)

Sr. No.	Application No.	Name of the Applicant
1	PH2019AM002	SWETHA PADMANABHAN
2	PH2019AM004	VINOTH KUMAR. S
3	PH2019AM006	SAIKRISHNAN. K
4	PH2019AM008	SHIVAKUMAR. M.J
5	PH2019AM009	AHALYA NALLURI
6	PH2019AM0011	WALEED MAKHDUMI
7	PH2019AM0013	ATHIRA.K
8	PH2019AM0014	PUGAL VENDAN.B
9	PH2019AM0015	SUNIL KUMAR.P.S
10	PH2019AM0016	AISHWARYA HEGDE.A
11	PH2019AM0017	SUSHAMITA WADDE
12	PH2019AM0018	GHANSHYAM GIRI
13	PH2019AM0019	ASHISH KUMAR
14	PH2019AM0021	YASHAS KUMAR.H.K
15	PH2019AM0023	MANJUNATHASWAMY .M.A
16	PH2019AM0024	DARSHAN M BIRADAR
17	PH2019AM0025	VASALA SAICHARAN
18	PH2019AM0028	JEEVARATHINAM KANDHASWAMY
19	PH2019AM0029	NIYANAKA. K. ABRAHAM


HEAD OF THE DEPARTMENT

PROFESSOR & HEAD
Dept. of Applied Mechanics & Hydraulics
NITK Surathkal, P.O. Srinivasnagar
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Date: 27.11.2019

OFFICIAL MEMORANDUM

Sub : Ph.D. Programme – Selection /Admission for the year 2019-20 (December Session) Intimation for Interview

Candidates are requested to appear for a written test &/or an interview before the Selection Committee at his/her own cost. He/she should produce all the original records such as Date of Birth Certificate, Qualifying Degree Certificate, Marks cards of all year/Semester (UG & PG Programme), GATE/NET Score Card, SC/ST Certificate, OBC Certificate, Persons with Disabilities (PWD) Certificate (if applicable), and Conduct Certificate.

Department : **Applied Mechanics and Hydraulics**
Place of interview : **AM007, Applied Mechanics Department, NITK, SURATHKAL**
Written Test Date & Time: **12.12.2019 at 8.30 AM to 10 AM**
Interview Date & Time : **12.12.2019 at 10.30 AM**
Category : **Full time/ Part Time**

Instructions to the Candidates:

1. Candidates should come prepared to appear for a written aptitude test before the interview. Outline syllabus for the aptitude test (refer **Annexure**) is same as that of basic Degree in relevant field and the scientific calculator is allowed.
2. Syllabus contained in the **Part A** is compulsory for all the candidates. There will be 15 multiple choice questions and each question carries one mark. Candidates have to select one of their relevant subject from the syllabus **Part B** (Marine Structures **OR** Water Recourses **OR** RS&GIS). Each section carries 15 multiple choice questions and each question carries one mark. There is no negative marking for both the Part A and Part B. Candidates will be evaluated in both the **Part A** and **Part B** for a total of 30 marks.
3. Candidate can leave the exam hall only after 10.00 am.
4. Candidate should also come prepared to give 5 minutes (limited to 5 slides) PPT presentation on the proposed research area/any relevant research topic of your choice.
5. CANDIDATES WHO HAVE NOT SUBMITTED MARKS OF FINAL EXAMINATION ALONG WITH APPLICATION FORM SHALL PRODUCE THE SAME AT THE TIME OF ADMISSION. HOWEVER CANDIDATES WHO HAVE WRITTEN FINAL YEAR EXAMINATIONS & ARE YET TO OBTAIN FINAL SEMESTER MARKS CARDS SHOULD SUBMIT THE SAME ON OR BEFORE THE DEADLINE SET BY THE INSTITUTE.
6. The candidates who have qualified from the other universities (other than NITK) have to produce Migration Certificate in order to validate their admission.
7. Candidates are required to make necessary arrangements on their own for travel and accommodation.
8. Sponsored candidates should have been serving in the sponsoring organization for period of at least 2 years after qualifying degree and have to produce a letter from their Employer stating that the candidate is deputed for higher studies in M.Tech (Research) course in the Institute on **full salary** during the study period. The Employer should indicate that the candidate will not be withdrawn mid-way before the completion of the course (sponsorship letter should be in format provided in the Application form).

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Annexure

Syllabus for the PhD Written Test

PART A (Compulsory) – 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 (Select Relevant Section) – Core Subjects

Section 1 (Marine Structures)

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)

Hydrology: 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 (RS & GIS)

Remote Sensing & GIS: Energy Sources & Radiation Principles, EMR & Spectrum, Emission, Transmission, Spectral Response Pattern, Components of GIS, Co-ordinate System, MAP Projections, Input Data for GIS, Types of Output, Level & Scale, Data Quality.


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