

**Department of Electronics and Communication Engineering**

**Selected Candidates list for Written Test & Interview**

**December 2023**

REFERENCE NUMBER	NAME
PH2023EC0016	SHILPASHREE M S
PH2023EC0017	AYUSH TRIPATHY
PH2023EC0018	R L PRASANNA
PH2023EC0019	K POORNIMA KAMATH
PH2023EC0020	DHANYASHREE



Prof. N. S. V. Shet  
(HoD, E&C Engineering)

प्राध्यापक एवं विभागाध्यक्ष/PROF & HEAD  
एवं सी. विभाग / Department of E & C  
एन.आई.टी.के. सुरत्कल/NITK Surathkal  
मंगलूर / MANGALURU - 575 025

**NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA SURATHKAL**  
P.O. SRINIVASNAGAR, MANGALURU-575 025

No. PhD/2023-24/E6

Date: 04-12-2023

**Admit Card**

**Sub: Ph.D. Programme – Written Aptitude Test / Interview for the year 2023-24**

With reference to his/her application for admission to PhD programme, Mr./Ms. \_\_\_\_\_ is requested to appear for the Written test/Interview at NITK Surathkal. He/she has to produce all the original records such as Date of Birth Certificate, Degree Marks Cards, SC/ST/OBC/EWS certificate (if applicable as per proforma), Person with disability certificate (if applicable), Sponsorship letter (if applicable) and Conduct Certificate during the interview.

Department	: Department of <b>Electronics and Communication Engineering (E&amp;C)</b>
Place of Reporting	: Department of <b>E&amp;C, Date: 14-12-2023, Time: 9:00 AM onwards</b>
Written Test Date and Time	: <b>14<sup>th</sup> December, 2023, Time: 10:00-11:00 AM</b>
Interview Date and Time	: <b>14<sup>th</sup> December, 2023, Time: 11:30 AM Onwards</b>

**NOTE:**

1. Candidates should be prepared to appear for the written Aptitude Test before the interview. Fee Structure for PhD programme and Course syllabus for aptitude test are provided on Institute's website, i.e. [www.nitk.ac.in](http://www.nitk.ac.in). A copy of the syllabus for the aptitude test has been appended to this call letter.
2. Full-time/External Registrants - sponsored from Industry or other organizations including Educational Institutions, should have been serving in the sponsoring organisation for a 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 Research Programme (Full time /External Registrant) in the Institute on **full salary** during the study period. The employer should indicate that the candidate will not be withdrawn midway before the completion of the course. (Sponsorship letter should be in the format provided in the Application Form).
3. Candidates who have not submitted marks of final examination along with application form shall produce the same at the time of admission if available. However, candidates who have written final year examinations and yet to obtain final semester mark cards should submit the same on or before **31.01.2024**
4. Your candidature for this test is provisional & is subject to your fulfilling the educational qualifications & other criteria prescribed for the programme as mentioned in Information Brochure, failing which your candidature can be summarily rejected after verification/scrutiny at a later stage.
5. Please keep the Admit Card ready during the test and interview. You are responsible for safe custody of the Admit Card and in the event of any other person using this Admit Card, the responsibility lies on you to prove that you have not used the service of an impersonator.
6. Please note that no expenses shall be payable for appearing in the written test/Interview.
7. The Selected candidates are required to pay fees and get admitted during the period **26.12.2023 to 27.12.2023** by physically reporting at the Institute.

Sd/ -

**Head of the Department**

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मंगलूर / MANGALURU - 575 025

Date: 07-12-2023

## Syllabus for PhD Programme Aptitude Test- December 2023

The Test paper has 2 Parts, Part-1 is compulsory, and Part -2 is stream specific modules. The candidate is supposed to attempt Module A or Module B or Module C from Part-2 depending on the domain in which a candidate wishes to pursue PhD. Part-1 has 15 multiple choice type questions, whereas, each module of Part-2 has 15 multiple choice type questions. Each correct answer carries 1 mark and wrong answer carries -0.25 marks.

Note: Total duration of Exam is one hour. Calculator is permitted.

### Part-1:

Linear Algebra, Calculus, Differential and Difference equations, Numerical methods, Transforms, Linear circuits and networks, Electronic components and Devices, Analog Electronics, Digital Electronics, Signals and Systems, Linear and Digital Control Theory

### Part-2:

#### Module-A (CEN Stream)

Electromagnetic Waves, Probability and Random Processes, Communication Theory, Communication Circuits, Transmission Lines, Wave Guides, Antennas, Microwave devices and Circuits, Data Communications, Communication Networks, Satellite Communication, Optical Communication, Fundamentals of Signal Processing.

#### Module-B (SPML stream)

Time domain analysis of discrete-time systems - Basic discrete time signals, discrete-time Fourier Series, Z Transform – definition and properties, Discrete-time Fourier Series and its properties, Properties and applications of DTFT. Relationship between time, Z and frequency domains, DFT fundamentals and Properties of DFT. FIR and IIR filters analysis and design, Fundamentals of image processing. Data structures, Linked list, stacks and queues.

#### Module-C (VLSI Design)

Linear and Digital ICs, Digital System Design, VLSI Technology, CMOS VLSI, Mixed Signal Design, HDL, Data converters, Microprocessors, Computer Architecture and organization, Logic Synthesis, DSP Architectures, Embedded Systems.