राष्ट्रीय प्रौद्योगिकी संस्थान गोवा
NATIONAL INSTITUTE OF TECHNOLOGY GOA

कुनकोलिम, जिला दक्षिण गोवा, गोवा, पिन-403703

Cuncolim, South Goa District, Goa, Pin–403703

Non-Teaching Staff Recruitment

(Advertisement No. NITGOA/Rect./2025/OW-05, NITGOA/Rect./2025/OW-08, NITGOA/Rect./2025/OW-09 dated 28.03.2025)

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Exam Pattern for Level I (MCQs)

Scheme of Written Test	
Written test for the posts of Technical Assistant, Technician and Senior Technician consists of Part-A and Part-B, a total of 75 MCQs carrying total marks of 75, which is as per details given below	
Level I: Part A (General)	25 Objective type multiple choice questions, carrying 01 mark each, with a total of 25 marks, based on the Syllabus. (25 marks)
Level I: Part B (Domain Specific)	50 Objective type multiple choice questions, carrying 01 mark each, with a total of 50 marks, based on the Syllabus. (50 marks)
Total	75 Objective type multiple choice questions (MCQs), carrying 01 mark each, with a total of 75 marks.
A negative marking of ¼ (0.25) mark will be applied for every wrong answer across all categories of posts No marks shall be awarded for any question that remains unattempted or left unanswered.	

Exam Pattern for Level II: (Skill Test)-Qualifying in nature

Assessment of technical proficiency using hands-on/ practical applications based examination tailored to Computer Science and Engineering, Electronics and Communication Engineering, Electrical and Electronics Engineering, Civil Engineering, Mechanical Engineering, Applied Sciences (Physics and Chemistry)

Instructions

1. The above tests (MCQ and Skill Test) will be based on the below-mentioned syllabus. The syllabus provided is indicative and not exhaustive.

2. The written examination for Level-I will be of 90 minutes duration.

3. The question paper will be in English language only.

4. For every wrong answer, there will be a negative marking of ¼ marks.

5. Level-I is an objective-type test consisting of multiple-choice questions with four options.

6. The ratio of shortlisting candidates for Level-II will be 1:10 in the respective category from Level-I.

7. Level-II is a Skill/Trade Test of qualifying nature, for which a minimum score of 50% is required to pass for UR candidate, 45% for OBC (NCL) and 40% for SC candidates.

8. The Level-I marks shall be considered for preparation of the merit list, only for those candidates who qualify the Skill Test (Level-II).

9. The candidature is PROVISIONAL. If at any stage it is found that any applicant does not fulfill any of the conditions of eligibility, his / her candidature will be cancelled and no appeal against such cancellation will be entertained. The fact that he / she has been called for the test does not confer any right on him / her to be treated as eligible in all aspects for appointment or to be considered for the test. No TA / DA for attending the test will be provided.

10. The Written Test for the eligible candidates for the above posts are scheduled to be held between **11/04/2026 to 12/04/2026 at NIT Goa.** The detailed schedule is enclosed as ANNEXURE-I.

11. The e-Admit cards will be sent to the candidates in the registered email id for appearing in the Written Test by 02/04/2026 or in case the eligible candidates have not received the admit card may email at recruitment@nitgoa.ac.in .

12. No candidates shall be allowed to enter the institute without a Hard copy of e-Admit Card supported by valid ID Proof.

13. It is to be noted that Mobile Phones or any electronic gadgets will not be allowed inside the exam hall. The institute will not be responsible for keeping any mobile or any electronic gadgets or any associated loss of mobile / electronic gadgets.

14. All the eligible candidates have to produce following documents at the time of document verification.
    a) The original certificates for their educational qualification and relevant experience mentioned in their application form.
    b) Proof of Identity issued by the Govt. (in Original) such Aadhar Card / Passport / Driving License / PAN Card / Voter Card.
    c) The person working in a Government, Semi Government, Autonomous organization including Public Sector Undertakings etc. and whose application has not been forwarded through proper channel by the employer will be required to bring a 'No Objection Certificate' along with 'Vigilance Clearance Certificate' from the present employer. In the absence of No Objection Certificate and other certificates their candidature will not be considered.

15. The Number of posts shown in Advt. may change and may vary at the time of selection/recruitment. The Institute reserves the right not to fill any/ all posts advertised and to reject any/all application without assigning any reason.

16. The selected candidates for Technical Assistant/ Senior Technician /Technician will be placed in any of the following centres/ departments of the Institute: ***Civil Engineering/ Computer Science and Engineering/ Electrical and Electronics Engineering/ Electronics and Communication Engineering/ Mechanical Engineering/ Physics/ Chemistry/ Estate Office***.

17. Mere appearance in the Written Test / Skill Test OR qualifying in the test doesn't entitle a candidate to be considered for selection unless candidates fulfill the eligibility conditions. APPLICANTS MUST FULLY SATISFY ABOUT THEIR ELIGIBILITY AS PRESCRIBED IN OUR WEBSITE, BEFORE APPEARING IN THE TEST. If a candidate is inadvertently allowed to appear at the test who otherwise doesn't fulfill the minimum eligibility requirements, the candidate cannot, at a later date, use that as a right to claim that candidate meets the eligibility requirements. The Institute reserves the right not to allow a candidate for selection if it is found that
    a) Minimum eligibility requirements are not fulfilled.
    b) Inadequate proof / false documentation has been done.
    c) Non-submission of valid NOC
    d) Any other similar valid reasons.

18. The candidates are also advised to visit the Institute website https://nitgoa.ac.in regularly for any further updates.

19. The Answer key for Level-I exam will be displayed on the Institute website by the end of the day of the written test**.**

20. Receipt of objections/ clarifications on question paper/answer key for Level-I can be submitted by the candidates within 2 days from the date of displaying of answer keys on the Institute website. The candidates are advised to submit the representations on recruitment@nitgoa.ac.in

21. The candidate must ensure to attach the transaction details payment of Rs. 1000/-per question towards the fee for consideration of objection/representation/clarification.

22. For PwD candidates 30 minutes extra time will be given in the Written Test for shortlisting purpose. Further, if they require a scribe, they need to communicate the requirement to recruitment@nitgoa.ac.in before the date of respective examination. Reservation to PwD will be as per GoI norms.

23. Result for the LEVEL-I written test will be made available on the Institute website by 19.04.2026 tentatively.

24. Shortlisted candidates in LEVEL-I Written Examination will be called for the Skill Test which will be scheduled on April 25-26, 2026 from 09.00 AM onwards. All the candidates are requested to visit the institute website regularly.

Account details are as under:

Bank Name: Union Bank of India
Branch: Farmagudi Branch, North Goa
Name of Account: Director NIT Goa Miscellaneous Account
Account Number: 520101026774476
IFSC Code: UBIN0913286

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REGISTRAR I/C

SYLLABUS FOR TECHNICAL ASSISTANT for LEVEL-I

Level I (Part A-General)

General English Language, Grammar and Usage	Includes questions on Antonyms, Synonyms, Spelling Check, Active/Passive Voice, Spotting Errors, Sentence Improvement, One Word Substitutes, Selecting Words, Sentence Corrections, Idioms and Phrases, Common Error Detection, Ordering of Words, Verbal Analogies, Sentence Formation, Completing Statements, Change of Speech.
General Awareness and Current Affairs	Includes questions relating to History, Indian Polity & Constitution, Art & Culture, Geography, Economics, General Policy, Science & Scientific Research, National/International Organizations /Institutions, current events, environment etc.
Quantitative Aptitude	Includes questions relating to Simplification, Decimals, Fractions, L.C.M., H.C.F., Ratio & Proportion, Percentage, Average, Profit & Loss, Discount, Simple & Compound Interest, Mensuration, Time & Work, Time & Distance, Tables & Graphs, etc.
Mental Ability and Reasoning	Includes questions relating to number series (missing/wrong term), alphabet series, alpha-numeric series, analogies (number, alphabet, words), classification (odd one out), coding and decoding, blood relations, order and ranking, mathematical operations, logical sequence of words, data sufficiency, decision making, arithmetical reasoning, verbal reasoning, non-verbal reasoning etc.

Level I (Part B- Domain Specific)

Section 1: Applied Mathematics

- **Algebra & Matrices:** Determinants, matrix addition/multiplication, solving linear equations (Cramer's rule or Matrix Method).
- **Calculus:** Basic differentiation and integration; finding rates of change and simple areas under curves.
- **Statistics & Probability:** Calculation of Mean, median, mode, standard deviation; Basic probability of events.
- **Trigonometry & Geometry:** Basic identities, properties of triangles, and coordinate geometry (straight lines and circles).
- **Units & Conversions:** Converting between Metric and Imperial systems, SI units of all physical quantities, and dimensional consistency.

Section 2: Applied Physics

- **Mechanics:** Newton's Laws of Motion, Work, Power, Energy, Friction, and Center of Gravity.
- **Properties of Matter:** Elasticity (Hooke's Law), Viscosity, Surface Tension, and Fluid Pressure (Pascal's Law).
- **Electricity & Magnetism:** Ohm's Law, Kirchhoff's Laws (KCL/KVL), Series and Parallel circuits, Fleming's Rules, and Faraday's Law of Induction.
- **Optics & Sound:** Basic reflection/refraction, lenses, and properties of sound waves (including Ultrasonic).
- **Heat & Thermodynamics:** Temperature scales (Celsius/Kelvin), Modes of heat transfer (Conduction, Convection, Radiation), and the First Law of Thermodynamics.

Section 3: Applied Chemistry

- **Electrochemistry:** Basics of batteries, electrolytic cells, and prevention of corrosion (Galvanization, Anodizing).
- **Engineering Materials:** Basic properties and uses of common Metals (Steel, Aluminum, Copper), Polymers (Plastics/Rubber), and Industrial Lubricants.
- **Environmental Science:** Air and Water pollution sources, E-waste management, and principles of Green energy (Solar/Wind).

Section 4: General Computer Literacy

- **Office Productivity:** Proficient use of MS Word (for report writing/documentation) and MS Excel (for data entry, basic formulas, and generating graphs).
- **Internet & Communication:** Efficient use of Search Engines, Email etiquette, and Cloud storage/sharing (Google Drive/OneDrive).
- **Cyber Awareness:** Basic security practices (creating strong passwords, Antivirus use, and identifying Phishing/Scam emails).

SYLLABUS FOR TECHNICAL ASSISTANT for LEVEL-II SKILL TEST

(Qualifying Nature)

Computer Science and Engineering

Assembling of PC, Installation of computer systems and troubleshooting, BIOS settings, installation, maintenance and troubleshooting computer peripherals such a printers, scanners etc. Preparing various types of cables for networking, Installation and Maintenance of UPS Systems, Installation and maintenance of various networking devices like Router, Switches, Laying out Structured cabling, security aspects of the campus networks, Installation of Firewalls, Configuring, maintaining and troubleshooting in LAN & WAN, Installation and working of Wireless networks, VPN set up and service providing, computing server installation and maintenance, GPU server maintenance

Binary representation of data, memory organization, computer performance parameters, operating system fundamentals, File and Directory management, Theoretical aspects of computer networks, OSI reference model, TCP/IP, LAN, WAN, Protocols and IEEE standards, routing algorithms, Congestion control algorithms, IPv4 and IPv6, Quality of Service, UDP and TCP, Domain name system, DHCP, configuration of electronic mail, HTTP, world wide web, creating websites, maintaining the websites, Programming in C, pointers, basic data structures, array, string, stack, queue, recursion, linear and non-linear data structures

Installation of various variants of operating systems like Windows and Linux, maintenance and troubleshooting/debugging of the same, time to time upgrading of OS, backing up, recovering etc. Installation, configuration, debugging and maintenance of various software such as database management systems, Visual Studio, UML, Cisco Packet tracer etc which are necessary for handling academic labs. Working of MS-Office components like Word, Excel & PowerPoint, Configuring and sharing internet in PCs and other devices, configuring firewalls &Usage of access lists, Working with Wireless Networks (Installation & Configuration)

Electronics and Communication Engineering

Conducting, demonstrating, and Troubleshooting experiments related to Analog Electronics, Digital Electronics, Microprocessors (8085/8086), and Communication Systems. Simulation Software: Proficiency in MATLAB, PSPICE, ORCAD, or Multisim for circuit simulation. Basic programming and interfacing of Arduino, 8051, or Raspberry Pi. Advanced usage of Storage Oscilloscopes (DSO), Spectrum Analyzers, and Function Generators. Schematic entry and PCB layout designing. Testing of modulation/demodulation circuits and antenna characteristics.

Electrical and Electronics Engineering

Safety and Wiring basics: Electrical safety practices, first aid practices, Earthing/Grounding methods; electrical power tools, measuring instruments; conductors, insulators, cables, fuses, circuit breakers; Testing and measurement of Resistance, Inductance, Capacitance, Current, Voltage, Power, Energy, battery and various loads; Wiring different circuits and loads, Industrial Wiring.

Basic Electrical Engineering: Basic electricity principles and laws, Resistances, Inductors, Capacitors, AC quantities, AC (single phase & three phase) and DC systems, DC Network theorems, Mathematical and phasor representation of alternating EMF and current; Star and Delta connections; Magnetism and electromagnetic induction; Renewable energy basics.

Electrical Machines: Working principle, operation and characteristics of - Transformers and auto transformers, DC Motors, Induction Motors, Synchronous Generator and Motor, Grid Synchronisation studies.

Analog and Digital Electronics: Diodes, Transistors, Boolean Algebra and its implementation, Gate logic design, MOS and CMOS and their Applications, Operational Amplifiers and their applications, counters, Flip Flops, microcontrollers, transducers.

Practical Aspects: Installation of 1-Phase and 3-phase AC wiring and DC wiring, Motor starter and control circuit applications, Assembling/dismantling transformers and motors, Electrical maintenance and troubleshooting; Building and substation load estimation and related calculations, Solar panel and inverter installation practice, Indian Tariff Structure, Regulations & Electricity Rules.

Civil Engineering

Theoretical/practical knowledge at the Diploma level pertaining to the various instruments/ equipment in different laboratories (material testing, concrete technology, transportation engineering, geotechnical engineering, environmental engineering, surveying and fluid mechanics laboratories of the Department), including introduction of these equipment, methodology of operation thereof, knowledge of the conduct of these tests, etc.

Mechanical Engineering

Theoretical/practical knowledge about the various instruments/ equipment in different laboratories (Workshop Practices, Mechanical Workshop, Strength of Material, Fluid Mechanics and Machinery, Automobile Engineering, IC Engine, Heat Transfer, Refrigeration and Air-Conditioning, Theory of Machine laboratories of the Department), including introduction of these equipment, methodology of operation thereof, knowledge of the conduct of these tests, etc.

Physics

General Physics & Instrument Handling Skills:

Measurement Techniques: Proper use of Vernier Calipers, Screw Gauge, Spherometer, and Traveling Microscope and Calculation of their least counts. **Mechanics Experiments:** Study of Compound Pendulum. Moment of Inertia of a Fly Wheel. Rigidity Modulus by Torsional Pendulum. Helmholtz Resonator. **Properties of Matter:** Surface Tension (Capillary rise method), Viscosity (Poiseuille's method).

Electronics & Circuit Design Skills (Hardware Skills)

Basic Electronics: Resistors: reading color code, Capacitor: Series and Parallel combinations, Inductor: study of magnetic field. Variation of resistivity and conductivity with temperature and dimensions of the specimen, I-V characteristics of diode. **Circuit Construction:** Study of Half-wave and Full-wave rectifiers (with filters). Characteristics of Zener Diode as a voltage regulator. Input/Output characteristics of Transistors (CE/CB/CC configuration). LCR circuit. **Logic Gates:** Verification of Truth Tables (AND, OR, NOT, NAND, NOR). **Amplifiers:** Designing inverting/non-inverting amplifiers using Op-amp 741.

Applied Optics & Modern Physics Knowledge

Optics: Newton's Rings to find the radius of curvature of Plano convex lens (to study the interference patterns), Diffraction Grating (Resolving power), Spectrometer usage for Prism/Grating experiments, Study of diffraction to calculate the unknown wavelength of LASER light, Study of diffraction to find the slit width.

Modern Physics: Transition from Classical mechanics to Quantum mechanics: Lagrangian and Hamiltonian formulation, Study of Photoelectric Effect and determining Planck's constant value. Study of Hall Effect. Crystallography and diffraction methods for structure determination, band theory of solids, free electron theory. Nuclear models, Alpha and Beta-decays, Superconductivity.

Specialized Skills

Physics Workshop Skills: Working with lathe machines, soldering, and casting. **Electrical Circuit Network Skills:** Domestic wiring, troubleshooting, and repairing home appliances.

Basic Instrumentation Skills: Knowledge to handle and operate phototubes, spectrometers, microscopes, telescopes, circuit boards, multimeter, LASERs. **Radiation Safety:** Handling radioactive sources, G.M. counter operation.

Typical Skills

Technical Proficiency: Ability to handle, calibrate, and repair instruments.

Analytical Ability: Data interpretation, error estimation, and numerical modeling.

Problem-Solving: Applying theoretical knowledge to real-world electrical/mechanical problems.

Chemistry

Fundamentals: Preparation of the standard solution, IUPAC nomenclature of organic and inorganic compounds, Chemistry Lab safety equipment, Chemistry Lab Safety Symbols, Emergency Actions in Lab Safety

Quantitative Analysis: Volumetric method, Gravimetric method, Potentiometric method, Conductometric method, Refractometry

Analytical Separation Methods: Solvent Extraction, Chemical precipitation, Chromotography

Spectrochemical Methods: Colorimetry, UV-Vis Spectroscopy, IR Spectroscopy, Magnetic Resonance Spectroscopy

Qualitative Analysis: Cations:

Pb^{2+},Cu^{2+}, Al^{3+}, Fe^{3+},Mn^{2+}, Ni^{2+} Zn^{2+} Co^{2+} $Ca^{2+}$$Sr^{2+}$ Ba^{2+} Mg^{2+}, NH_4^+

Anions:

CO_3^{2-},S^{2-} , SO_3^{2-}, NO_3^-, NO_2^- , Cl^-, Br^-, I^- ,SO_4^{2-}, PO_4^{3-} , CH_3COO^-, $C_2O_4^{2-}$

To detect the presence of functional groups such as unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic, amino groups, etc., in an organic compound. Detection of -Nitrogen, Sulphur, Chlorine in organic compounds.

SYLLABUS FOR SENIOR TECHNICIAN AND TECHNICIAN FOR LEVEL-I

Level I (Part A-General)

General English Language, Grammar and Usage	Includes questions on Antonyms, Synonyms, Spelling Check, Active/Passive Voice, Spotting Errors, Sentence Improvement, One Word Substitutes, Selecting Words, Sentence Corrections, Idioms and Phrases, Common Error Detection, Ordering of Words, Verbal Analogies, Sentence Formation, Completing Statements, Change of Speech.
General Awareness and Current Affairs	Includes questions relating to History, Indian Polity & Constitution, Art & Culture, Geography, Economics, General Policy, Science & Scientific Research, National/International Organizations /Institutions, current events, environment etc.
Quantitative Aptitude	Includes questions relating to Simplification, Decimals, Fractions, L.C.M., H.C.F., Ratio & Proportion, Percentage, Average, Profit & Loss, Discount, Simple & Compound Interest, Mensuration, Time & Work, Time & Distance, Tables & Graphs, etc.
Mental Ability and Reasoning	Includes questions relating to number series (missing/wrong term), alphabet series, alpha-numeric series, analogies (number, alphabet, words), classification (odd one out), coding and decoding, blood relations, order and ranking, mathematical operations, logical sequence of words, data sufficiency, decision making, arithmetical reasoning, verbal reasoning, non-verbal reasoning etc.

Level I (Part B- Domain Specific)

Section 1: Mathematics

- **Algebra:** Polynomials, Linear Equations in two variables, Quadratic Equations, and Arithmetic Progressions (AP).
- **Trigonometry & Geometry:** Introduction to Trigonometry, Trigonometric-Identities, Heights and Distances, Coordinate Geometry (Distance & Section formulas).
- **Mensuration:** Surface Areas and Volumes of combinations of solids (Cylinders, Cones, Spheres); Areas related to Circles.
- **Data Handling:** Mean, Median, and Mode of grouped data; Basic Probability of events.

Section 2: Science

- **Chemical Substances:** Chemical reactions, Acids, Bases and Salts (pH scale), Metals & Non-metals (Reactivity series, Corrosion prevention), and Carbon Compounds.
- **Natural Phenomena:** Reflection of light by curved surfaces; Images formed by spherical mirrors, Centre of curvature, principal axis, principal focus, focal length, mirror formula magnification. Refraction; Laws of refraction, refractive index. Refraction of light by spherical lens; Image formed by spherical lenses; Lens formula, Magnification. Power of a lens. Functioning of a lens in human eye, defects of vision and their corrections, applications of spherical mirrors and lenses. Refraction of light through a prism, dispersion of light, scattering of light, applications in daily life.
- **Effects of Current & Magnetism:** Electric current, potential difference and electric current. Ohm's law; Resistance, Resistivity, Factors on which the resistance of a conductor depends. Series combination of resistors, parallel combination of resistors and its applications in daily life. Heating effect of electric current and its applications in daily life. Electric power, Interrelation between P(Power), V(Voltage), I(Current) and R(Resistance). Magnetic field, field lines, field due to a current carrying conductor, field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's Left Hand Rule, Direct current. Alternating current: frequency of AC. Advantage of AC over DC. Domestic electric circuits.
- **Natural Resources & Environment:** Eco-system, Environmental problems, Ozone depletion, waste production and their solutions. Biodegradable and non-biodegradable substances.

Section 3: Basic Computer Awareness

- **Office Tools:** Basics of Word Processing (Documentation) and Spreadsheets (Data entry, basic formulas, and charts in MS Excel).
- **Communication:** Web browsing, Search Engine usage, and Professional Email etiquette.
- **Cyber Security:** Basic awareness of Phishing, Malware, strong password practices, and Antivirus importance.

SYLLABUS FOR SENIOR TECHNICIAN AND TECHNICIAN FOR LEVEL-II SKILL TEST

(Qualifying Nature)

Computer Science and Engineering

Assembling of PC, Installation of computer systems and troubleshooting, BIOS settings, installation, maintenance and troubleshooting computer peripherals such as printers, scanners etc. Preparing various types of cables for networking, Installation and Maintenance of UPS Systems, Installation and maintenance of various networking devices like Router, Switches, laying out Structured cabling, Configuring, maintaining and troubleshooting in LAN, Installation and working of Wireless networks.

Binary representation of data, memory organization, computer performance parameters, operating system fundamentals, File and Directory management, Theoretical aspects of computer networks, OSI reference model, TCP/IP, LAN, WAN, Protocols and IEEE standards, routing algorithms, Congestion control algorithms, IPv4 and IPv6, Quality of Service, UDP and TCP, Domain name system, DHCP, HTTP, world wide web, creating websites, maintaining the websites

Installation of various variants of operating systems like Windows and Linux, maintenance and troubleshooting/debugging of the same, time to time upgrading of OS, backing up, recovering etc. Installation, configuration, debugging and maintenance of various software such as database management systems, Visual Studio, UML, Cisco Packet tracer etc which are necessary for handling academic labs. Working of MS-Office components like Word, Excel & PowerPoint, Configuring and sharing internet in PCs and other devices, configuring firewalls &Usage of access lists, Working with Wireless Networks (Installation & Configuration)

Electronics and Communication Engineering

Proper use of PPE, hand tools (cutters, strippers, crimping tools), and soldering iron maintenance. Soldering electronic components (resistors, ICs, diodes) on PCB, de-soldering, and identifying dry joints. Assembling circuits on breadboards based on circuit diagrams. Identifying faulty components, checking continuity, measuring voltage, resistance, and current using a multimeter and DSO. Usage of function generators, signal generators, and power supplies. Identification of active and passive components like: transistors, capacitors, transformers, integrated circuits.

Electrical and Electronics Engineering

Safety and Wiring basics: Electrical safety practices, first aid practices, Earthing/Grounding methods; electrical power tools, measuring instruments; conductors, insulators, cables, fuses, circuit breakers; Testing and measurement of Resistance, Inductance, Capacitance, Current, Voltage, Power, Energy, battery and various loads; Wiring different circuits and loads.

Basic Electrical Engineering: Basic electricity principles and laws, Resistances, Inductors, Capacitors, AC quantities, AC (single phase) and DC systems, DC Network theorems, Mathematical and phasor representation of alternating EMF and current.

Electrical Machines: Working principle, operation and characteristics of – Transformers, DC Motors, Induction Motors.

Analog and Digital Electronics: Diodes, Transistors, Boolean Algebra and its implementation, Gate logic design.

Practical Aspects: Installation of 1-Phase and 3-phase AC wiring and DC wiring, Motor starter and control circuit applications, Assembling/dismantling transformers and motors, Electrical maintenance and troubleshooting.

Civil Engineering

Theoretical/practical knowledge pertaining to the various instruments/ equipment in different laboratories (material testing, concrete technology, transportation engineering, geotechnical engineering, environmental engineering, surveying and fluid mechanics laboratories of the Department), including introduction and working of these equipment.

Mechanical Engineering

Theoretical/practical knowledge about the various instruments/ equipment in different laboratories (Workshop Practices, Mechanical Workshop, Strength of Materials, Fluid Mechanics and Machinery, Automobile Engineering, IC Engine, Heat Transfer, Refrigeration and Air-Conditioning, Theory of Machine laboratories of the Department), including introduction, working and troubleshooting of these equipment.

Physics

Units and Measurements: Knowledge of fundamental and derived units, Dimensional Analysis, Error calculation

Kinematics and laws of motion: Knowledge of scalar and vectors, Knowledge of mathematical laws involved in case of vectors, Basics idea of frame of reference and Newton's Laws of Motion, Conservations laws, Uniform circular motion, Gravitation

Mechanical and Thermal properties: Stress-Strain curve, Hooke's law, Modulus of rigidity (Young's, Bulk, Shear), Pascal's and Stoke's law, Bernoulli's Theorem, Surface tension and capillary action, Laws of thermodynamics (zeroth, first and second law), Kinetic theory of gases.

Electrostatic and Current Electricity: Electric charge and fields: Coulomb's law, Gauss's law and applications, Electric dipoles, Electric potential: due to point charge, equipotential surfaces, Electric current: flow of charges in conductor

Magnetism and Electrodynamics: Magnetic fields: Biot-Savart and Ampere's law, Magnetic forces and magnetic dipoles, Para-, dia- and ferro – magnetic substances, Faraday's and Lenz's Law

Atoms and Nuclei: Photoelectric effect, de-Broglie relation, Rutherford's model of atom and Bohr model of hydrogen atom, Mass defect and binding energy per nucleon, Semiconductor diode - I-V characteristics in forward and reverse bias

Instrument Calibration: Basics knowledge of least count of various instruments, Basics knowledge of calibrating instruments, Basic knowledge of connection design

Hardware Skills: Knowledge of Vernier Calipers, Screw Gauge, Simple Pendulum, Resonance, Diode. Circuit design for various combinations of diodes, capacitors, resistors and inductors. Handling mirrors and lens for optical experiments. Knowledge of gratings and slits

Technical Skills: Handling wiring, troubleshooting, and repairing instruments. Basic proficiency in handling soldering and casting. Handling LASERs. Basic knowledge of assembling optical benches and resonators

Chemistry

Some Basic Concepts of Chemistry: Laws of chemical combination, Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, stoichiometry and calculations based on stoichiometry, Structure of atom

Periodic trends in properties of elements: atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valancy.

Chemical Bonding and Molecular Structure: Ionic bond, Covalent bond, Liwes Theory, VBT Theory, VSPER Theory, MOT.

Electrochemistry: Concept of oxidation and reduction, oxidation number, redox reactions, balancing redox reactions, standard electrode potential, Nernst equation, electrodes and their types, ion selective electrodes and application, conductance in electrolytic solutions

Quantitative Analysis: Volumetric analysis, Gravimetric analysis

Qualitative Analysis Cations:

Pb^{2+},Cu^{2+}, Al^{3+}, Fe^{3+},Mn^{2+}, Ni^{2+} Zn^{2+} Co^{2+} $Ca^{2+}$$Sr^{2+}$ Ba^{2+} Mg^{2+}, NH_4^+

Anions:

CO_3^{2-},S^{2-} , SO_3^{2-}, NO_3^-, NO_2^- , Cl^-, Br^-, I^- ,SO_4^{2-}, PO_4^{3-} , CH_3COO^-, $C_2O_4^{2-}$

Note: It may be noted that the syllabus given above for the posts of Technical Assistant, Senior Technician, Technician are indicative in nature, questions from other topics related to the job and prescribed for the educational qualification of the post may appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.

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ANNEXURE-I

Schedule of the LEVEL-I Written Test

Post	Date of Written Test	Examination Time
Technician	11.04.2026	11:00 AM to 12:30 PM
Senior Technician	11.04.2026	03:30 PM to 05:00 PM
Technical Assistant	12.04.2026	03.30 PM to 05.00 PM

Schedule of the LEVEL-II Skill Test

Post	Date of Skill Test	Reporting Time	Examination Time
Technician	25.04.2026	09.00 AM to 10.00 AM	1.00 PM to 2.00 PM
Senior Technician	25.04.2026	09.00 AM to 10.00 AM	4.00 PM to 5.00 PM
Technical Assistant	26.04.2026	09.00 AM to 10.00 AM	4.00 PM to 5.00 PM

- Result for the LEVEL-I written test will be made available on the Institute website by 19.04.2026 tentatively.
- Shortlisted candidates in LEVEL-I Written Examination will be called for the Skill Test which will be scheduled on April 25-26, 2026 from 09.00 AM onwards. All the candidates are requested to visit the institute website regularly.

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