भारतीय सूचना प्रौद्योगिकी संस्थान धारवाड़
INDIAN INSTITUTE OF
INFORMATION TECHNOLOGY DHARWAD
[Institute of National Importance by Act of Parliament]

Non-Teaching Staff Recruitment Advertisement No. IIITDWD/REC/NT/2025/128 dated 16-05-2025

Assistant Registrar

All the shortlisted candidates are required to appear in person for the Written Test and Personal Interview scheduled on (Will be intimated shortly)..... The venue for the both Written Test and Interview is IIIT Dharwad, (Address), Dharwad, Karnataka.

Candidates securing minimum qualifying marks in the Written Test as per the benchmark decided by the Selection Committee shall be shortlisted for the Personal Interview.

The Written Test will be qualifying in nature and the final selection of the candidates will be based on the performance in the Personal Interview from amongst the candidates shortlisted after Written Test.

Scheme of Examination:

Written Test (Objective Type MCQ)

Part	Topics/Subjects	Total Marks	Duration
A	General Awareness	60 (A-30, B-30)	60 Minutes
	English		
	Aptitude Test		
	Computer Awareness		
B	Government Rules and Regulations		

Note: *0.25 Negative Marks for every wrong answer in the MCQ test.*

Broad area of syllabus of each section for written test is as below, which is indicative in nature:

Topics/Subjects	Broad Syllabus
General Awareness	Everyday applications of science, international organizations, geography, history (both Indian and foreign), economics, current affairs, sports, about Karnataka, etc.
English	Synonyms, grammar, sentence correction/completion, vocabulary, etc.
Aptitude Test	Reasoning, Quantitative Aptitude, and Data Interpretation
Computer Awareness	Basic Computer Terminology, Computer Hardware and Software, MS Word and MS Excel, MIS, Storage and Operating Systems, Safety and Security of Computer Systems, E-mail and Internet Usage, Search Engines, Common AI tools for administration, etc.
Government Rules and Regulations	FR & SR, RTI, Fundamentals of Accounts & related topics, Audit, Budget, CCS Rules, Leave Rules, TA & LTC, General Financial Rules (Govt. of India), Estate Management, GeM, DFPR, PFMS, Reservation and Concession in Govt. Service, Constitution of India,

	Medical Rules, CGHS, Pay Fixation, Income Tax, MACP/DACP, Contract Management, Grievance Redressal Mechanism NPS, Payment of Gratuity Act, 1972, Deputation, Probation and Confirmation, Pension, GST, TDS, Rajbhasha Acts/Rules/Guidelines, HEFA, Governance in IIIT, IIIT Act and Statutes, NEP, Academic Governance, Labour Laws, Office Procedures, Store & Purchase Rules, Higher Education System in India, Human Resource Management, Public Administration, etc.

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Non-Teaching Staff Recruitment Advertisement No. IIITDWD/REC/NT/2025/128 dated 16-05-2025

Assistant Executive Engineer

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Candidates securing minimum qualifying marks in the Written Test as per the benchmark decided by the Selection Committee shall be shortlisted for the Personal Interview.

The Written Test will be qualifying in nature and the final selection of the candidates will be based on the performance in the Personal Interview from amongst the candidates shortlisted after Written Test.

Scheme of Examination:

Written Test (Objective Type MCQ)

Part	Topics/Subjects	Total Marks	Duration
A	General Awareness	60 (A-20 & B-40)	90 Minutes
	English		
	Aptitude Test		
B	Works & Public Procurement		
	Domain Specific Knowledge		

Note: *0.25 Negative Marks for every wrong answer in the MCQ test.*

Broad area of syllabus of each section for written test is as below, which is indicative in nature:

Topics/Subjects	Broad Syllabus
General Awareness	Everyday applications of science, international organizations, geography, history (both Indian and foreign), economics, current affairs, sports, about Karnataka, etc.
English	Synonyms, grammar, sentence correction/completion, vocabulary etc.
Aptitude Test	Reasoning, Quantitative Aptitude and Data Interpretation.
Works/Public Procurement	CPWD Rules & Regulations like GCC, Maintenance Manual, Works Manual, EPC Contracts etc. GFR Rules and other GoI Public Procurement rules as mentioned in Manual for procurement of Goods, Services & Works. Drafting of Contracts, Dispute Resolution, etc.
Domain Specific Knowledge	Estimation and Costing, Specifications of civil works, Surveying in Construction, Bearing capacity of soil, foundations, Soil compaction, Water distribution, Sewerage System, Flexible and rigid pavements, traffic signs and markings, IS-456, Mix design, RCC and Steel Structures.

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Non-Teaching Staff Recruitment Advertisement No. IIITDWD/REC/NT/2025/128 dated 16-05-2025

Junior Superintendent

All the shortlisted candidates are required to appear in person for the Written Test scheduled on (Will be intimated shortly) ..... The venue for the Written Test (I & II) is IIIT Dharwad, (Address), Dharwad, Karnataka.

Scheme of Examination:

Written Test - I (Objective Type MCQ)

Part	Topics/Subjects	Total Marks	Duration
A	General Awareness	60 (A-30, B-30)	60 Minutes
	English		
	Aptitude Test		
	Computer Awareness		
B	Government Rules and Regulations		

Note: *0.25 Negative Marks for every wrong answer in the MCQ test.*

Written Test - II (Subjective Type)

Topics/Subjects	Total Marks	Duration
Letter writing, Noting, Essay etc.	30	45 Minutes

All candidates have to appear for both Written Test I & II. However Written Test II (Subjective Type) will be evaluated only for those candidates who secure minimum qualifying marks in the Written Test – I, as per the benchmark decided by the Selection Committee.

The final selection will be based on aggregate marks obtained both in Written Test I and Written Test II, subject to verification of the original documents and confirmation of eligibility criteria.

Broad area of syllabus of each section is as below, which is indicative in nature:

Written Test I

Topics/Subjects	Broad Syllabus
General Awareness	Everyday applications of science, international organizations, geography, history (both Indian and foreign), economics, current affairs, sports, and about Karnataka, etc.
English	Synonyms, grammar, sentence correction/completion, vocabulary, etc.
Aptitude Test	Reasoning, Quantitative Aptitude, and Data Interpretation.
Computer Awareness	Basic Computer Terminology, Computer Hardware and Software, MS Word and MS Excel, MIS, Storage and Operating Systems,

	Safety and Security of Computer Systems, E-mail and Internet Usage, Search Engines, Common AI tools for administration, etc.
Government Rules and Regulations	Service Rules and Service Matters, RTI, Fundamentals of Accounts & related topics, Leave Rules, TA & LTC, Medical, General Financial Rules (Govt. of India), GeM, DFPR, PFMS, Reservation and Concession in Govt. Service, Constitution of India, Pay Fixation, Income Tax, NPS, Pension, GST, TDS, Rajbhasha Acts/Rules/Guidelines, HEFA, Governance in IIIT, NEP, Labour Laws, Office Procedures, Store & Purchase Rules, Higher Education System in India, etc.

Written Test II

Letter Writing, Noting, Essay, Short Note etc.

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Non-Teaching Staff Recruitment Advertisement No. IIITDWD/REC/NT/2025/128 dated 16-05-2025

Junior Technical Superintendent

All the shortlisted candidates are required to appear in person for the Written Test scheduled on (Will be intimated shortly)..... The venue for the Written Test (I & II) is IIIT Dharwad, (Address), Dharwad, Karnataka.

Scheme of Examination:

Written Test I (Objective Type MCQ)

Part	Topics/Subjects	Total Marks	Duration
A	General Awareness	60 (A-20, B/C – 40)	60 Minutes
	Aptitude Test		
	English		
B	Domain-Specific Knowledge (CSE)		
C	Domain-Specific Knowledge (ECE/EE)		

Note: *0.25 Negative Marks for every wrong answer in the MCQ test.*

Written Test II (Subjective Type/ Trade Test)

Topics/Subjects	Total Marks	Duration
Domain Specific Subjective Question (basically linked to experiments)	40	45 Minutes

Part A of Written Test I is compulsory for all candidates. Candidates who chose the CSE domain must take Part B, while those who chose the ECE or EE domain must take Part C.

Candidates securing minimum qualifying marks in the Written Test I as per the benchmark decided by the Selection Committee shall be shortlisted for the Written Test II.

The final selection will be based on aggregate marks obtained from both the written tests with a **weightage of 40% in Written Test I and 60% in Written Test II,** subject to verification of the original documents and confirmation of eligibility criteria.

Broad area of syllabus of each section is as below, which is indicative in nature:

Written I

Part	Topics/Subjects	Broad Syllabus
A	General Awareness	Everyday applications of science, international organizations, geography, history (both Indian and foreign), economics, current affairs, sports, about Karnataka, etc.
	General Aptitude	Reasoning, Quantitative Aptitude and Data Interpretation.
	English	Synonyms, grammar, sentence correction/completion, vocabulary etc.

B	Domain-Specific Knowledge (CSE)	**Data Structures** (arrays, linked lists, stacks, queues, trees, and graphs, along with associated algorithms for searching, sorting), **Discrete Maths** (logic, set theory, relations and functions, combinatorics, graph theory, and algebraic structures), Operating Systems (process management, CPU scheduling, memory management, file systems, and synchronization), **C-Programming Language** (data types, operators, control flow statements, functions, arrays, structures, pointers, and basic file handling), **Logic Design** (number systems, Boolean algebra, logic gates, combinational logic circuits like adders, multiplexers, etc., sequential logic circuits like flip-flops, registers, and counters), **Data Base Management Systems** (foundational concepts, data modelling, database design, and querying, Entity-Relationship (ER) modelling, relational model, relational algebra, SQL, normalization, transaction management, and concurrency control), **Microprocessors (**architecture, instruction set, programming, and interfacing of the 8085 microprocessor).
C	Domain-Specific Knowledge (ECE/EE)	**Electronics Devices and Circuits:** N and P type semiconductors, diode, V-I Characteristics, Zener voltage regulation, shunt voltage regulator, Varistor and Thermistor. Transistors, FET, and MOSFET, NPN and PNP type BJT, Transistor biasing, stabilisation, heat sink. Amplifier: CE, CB, CC, input and output characteristics- cut off, saturation, and active regions. FET, MOSFET- N type enhancement mode- construction, characteristics, switching. Optoelectronic devices: photo diode, opto isolator, photo voltaic cell, LED, LDR, LCD, opto coupler. OP-AMP and Timers: OP-AMP–Operation, characteristics and applications. CMRR, slew rate, inverting and non-inverting configuration, integrator, differentiator, summer, voltage follower, and comparator, Filters: low pass, high pass passive and other active filters. Timers: LM 555, duty cycle, time constant, Multi-vibrators using 555. **Digital Electronics:** Boolean Algebra, Basic logic gates, Boolean identities, De Morgan's theorems, SOP, POS, AND-OR networks. Algebraic Simplification, Karnaugh Map, Codes BCD, Octal, Hexadecimal, ASCII, Gray, Excess 3 code. Combinational Circuit: Half Adder, Full adder, Ripple Carry adder, the carry look-ahead adders, Half-Subtractor, Full-Subtractor, decoder, multiplexer, de-multiplexer parity generator and checker. Logic Families: TTL, ECL, MOS and CMOS, Transfer Characteristics, noise margin, propagation delay,

		fan-in, fan-out, power dissipation, Multiplexer, Decoder, Decoder driver, 7 segment display decoder driver, Encoders Octal to Binary, Decimal to BCD encoders, Latch, R-S, J-K, D flip flops, Master Slave, Edge triggered flip flops, shift registers, asynchronous and synchronous counters **Microprocessors and Applications:** Intel 8085A microprocessor: Register, Instruction sets, operand addressing modes, instruction cycle, machine cycle, Mapping of I/O to microprocessor. Programming: Concept of Micro and Macro programming, arithmetic and logical computations, block of data moving looping, counting, time delaying operations. Stack and subroutines, stack memory. Interrupts and Peripherals. Intel 8085 software and hardware interrupts, RIM, and SIM instructions. Peripherals Intel 8255, 8257, 8254 and 8251. Interfacing of I/O to microprocessor. **Control System:** Modelling of physical systems: Time-domain, frequency-domain and state-variable models, signal flow graph, time and frequency response of first and second order systems. Control system characteristics: stability, sensitivity, disturbance rejection and steady-state accuracy. Routh-Hurwitz test, relative stability, root locus, Bode and Nyquist plots. Controller: lag, lead, lag-lead, PID, controller design based on root-locus and frequency response plots. Modern design techniques: Canonical state-variable models, equivalence between frequency and time-domain representations, diagonalisation, controllability and observability, pole placement, feedback with integral control. **Instrumentation and Measurements:** Accuracy, Precision, Fidelity, speed of response, static & dynamic performance characteristics, dynamic step response, ramp response of first and second order instruments. Classifications of errors, error analysis of measurement. Analog and Digital instruments, PMMC Galvanometer, Analog multimeter, voltmeter, ammeter, Series and shunt ohmmeter, Digital multimeter, Signal generator and Function generator, Cathode Ray Oscilloscope, Lissajous pattern, Introduction to DC and AC bridges for measurement of voltage /current / resistance /capacitance and inductance. Transducer, classification, resistive, capacitive, inductive, magnetic, optical, piezoelectric, pneumatic. **Signals and Systems:** Continuous and discrete time signals: Classification, scaling, shifting and inversion; symmetry, periodicity, elementary signals, Unit Impulse, Unit Step Functions, Ramp Function,

		Energy and power signals. Periodic and aperiodic signals, Orthogonal signal. Continuous-time and Discrete-time LTI Systems with properties. Systems: classification of systems, linearity, time/shift-invariance, causality, stability, impulse response and step response, convolution, differential and difference equations, Linear constant co-efficient differential equations and difference equations. Fourier-series and Fourier Transform and properties, Parseval's relation, Discrete-Time Fourier-series and Discrete-Time Fourier Transform and properties. Laplace Transform and its properties, Unilateral Laplace Transform. Analysis of LTI systems using Laplace-transform. Z-transform and its properties. Unilateral Z-Transform. Analysis of LTI systems using Z-transform. State-space analysis and multi-input, multi-output representation. The Sampling Theorem , Spectra of sampled signals. Reconstruction: ideal interpolator, zero-order hold, first-order hold. Aliasing and its effects. **RF and Communication Systems:** Principles of Radiation, EM waves and their spectrum, EM wave propagation –Ground wave, Sky wave, Space wave propagation. Maxwell's equations, Structure of Ionosphere, Skip distance, Radio horizon, skip zone. HF, VHF, UHF and microwave antennas. RADAR, Satellite and Optical communication systems. Transmission lines –Twisted pair wires, coaxial cables and Wave guides, communication systems: Telephony, Telegraphy, Radio and TV transmission. AM, FM and PM and their respective Demodulation Techniques, Advantages of FM over AM, AM Limiters. Pre-emphasis and De-emphasis, Transmitters for AM, FM, SSB, ISB systems. PAM, PPM, PDM and PCM systems. TDM and FDM systems. **Digital Communications:** Sampling theorem, Natural and Flat top sampling, Quantization and error, Pulse-Amplitude Modulation, Channel bandwidth, Pulse-code modulation (PCM), Electrical representation of binary digits, PCM system, Companding, Multiplexing. Differential PCM, Delta modulation, Linear Predictive coder. Binary Phase-Shift Keying (BPSK), Differential PSK, Differentially Encoded PSK, Quadrature PSK, Quadrature Amplitude Shift Keying (QASK), Binary Frequency-Shift Keying (BFSK), Similarity of BPSK and BFSK, Minimum Shift Keying (MSK). Baseband signal receiver, Probability of error. Matched Filter, Coherent reception of PSK and FSK, Non-Coherent reception of FSK, PSK and QPSK. Error probability of BPSK, BFSK and QPSK. Bit error rate and Symbol Error rate. Information Theory and Coding, Discrete messages,

		information, Entropy, Information rate, Shannon's theorem, Gaussian channel, Bandwidth-S/N trade off, Coding- Parity check bit coding, error detection and error correction coding, Block codes, Convolution codes, Comparison of error rates in coded and un-coded transmission. **Linear Integrated Circuits:** Differential Amplifiers (DA), CMRR, PSRR and ICMR and output swing of BJT-based DA, active loads, IC biasing, current source and sink, current mirrors, level translators' circuits. OPAMP: Block-level and internal circuit level working of op-amp, ideal characteristics, open loop gain, negative feedback with closed loop gain, adder, subtractor, average, precision rectifiers. Integrator, differentiator, log and antilog amplifiers, absolute value detectors, voltage limiters, instrumentation amplifier etc., non-linear applications such as comparators, zero crossing detector, analog multipliers, etc. Oscillators: Classification, Barkhausen Criterion, inverting and non-inverting Schmitt triggers, integrator, square wave and triangular wave oscillators, Phase Shift Oscillator, Wein Bridge Oscillator, voltage-controlled oscillator (VCO), PLL. Active filters, active RC-filters (first order and second order). Converters: Analog to Digital and Digital to Analog Converter. **Electronics and Electrical Circuits:** D.C. Circuits: Dependent and independent Voltage and current sources, Nodes, Paths, Loops and Branches, Nodal and Mesh Analysis, Superposition, Source Transformations, Thevenin's and Norton's Theorems, Maximum Power Transfer. RL, RC and RLC Circuit. AC Circuit Analysis: Sinusoidal Forcing Function, Phasor Relationship for R, L and C, Impedance and Admittance, Phasor Diagrams, Instantaneous Power, Average Power, Complex Power, Apparent Power and Power Factor. Ohm's Law and Kirchhoff's Laws, Series-parallel circuits, Power and energy, Electromagnetism, Faradays Laws, Lenz's Law, Fleming's Rules, Statically and dynamically induced EMF, self-inductance, mutual inductance and coefficient of coupling, Energy stored in magnetic fields, Single Phase A.C. Circuits, Generation of sinusoidal voltage, average value, root mean square value, form factor and peak factor of sinusoidal voltage and current and phasor representation of alternating quantities, Analysis with phasor diagrams of R, L, C, RL, RC and RLC circuits, Real power, reactive power, apparent power and power factor, series, parallel and series-parallel circuits. Three Phase A.C. Circuits, Generation of three-phase power, definition of Phase sequence, balanced supply and balanced load, Relationship between line and phase values of balanced star and delta

		connections, Power in balanced three phase circuits, measurement of power by two wattmeter method. **Transformer and Machines:** Principle of operation and construction of single phase transformers (core and shell types). EMF equation, losses, efficiency and voltage regulation; Synchronous Generators- Principle of operation; Types and construction; EMF equation; DC Machines working principle, generator and motor; EMF equation of generator, relation between EMF induced and terminal voltage, brush drop and drop due to armature reaction; Back EMF, torque equation; Types of D.C. motors, characteristics; Necessity of a starter for DC motor; Three Phase Induction Motors; rotating magnetic field; operation, types and constructional features; Slip and its significance; squirrel cage and slip ring motors; star-delta starter. Sources of Electrical Power, Introduction to Wind, Solar, Fuel cell, Tidal, Geothermal, Hydroelectric, Thermal-steam, diesel, gas, nuclear power plants.

Written II

- Subjective Question/Practical Test linked to lab experiments, etc.

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Non-Teaching Staff Recruitment Advertisement No. IIITDWD/REC/NT/2025/128 dated 16-05-2025

Junior Engineer

All the shortlisted candidates are required to appear in person for the Written Test scheduled on ……(Will be intimated shortly)…….. The venue for the Written Test (I & II) is IIIT Dharwad, (Address), Dharwad, Karnataka.

Scheme of Examination:

Written Test - I (Objective Type MCQ)

Part	Topics/Subjects	Total Marks	Duration
A	General Awareness	60 (A-20, B/C-40)	60 Minutes
	Aptitude Test		
	English		
B	Domain-Specific Knowledge (Civil)		
C	Domain-Specific Knowledge (Elect)		

Note: *0.25 Negative Marks for every wrong answer in the MCQ test.*

Written Test - II (Subjective Type/Trade Test)

Topics/Subjects	Total Marks	Duration
Domain Specific Subjective Question	40	45 Minutes

Part A of Written Test I is compulsory for all candidates. Candidates who chose the Civil domain must take Part B, while those who chose the Electrical domain must take Part C.

Candidates securing minimum qualifying marks in the Written Test I as per the benchmark decided by the Selection Committee shall be shortlisted for the Written Test II.

The final selection will be based on aggregate marks obtained from both the written tests, with a **weightage of 40% in Written Test I and 60% in Written Test II,** subject to verification of the original documents and confirmation of eligibility criteria.

Broad area of syllabus of each section is as below, which is indicative in nature:

Written I

Part	Topics/Subjects	Broad Syllabus
A	General Awareness	Everyday applications of science, international organizations, geography, history (both Indian and foreign), economics, current affairs, sports, about Karnataka, etc.
	Aptitude Test	Reasoning, Quantitative Aptitude, and Data Interpretation.
	English	Synonyms, grammar, sentence correction/completion, vocabulary, etc.

B	Domain-Specific Knowledge (Civil)	**Building Materials**: Physical and Chemical properties, classification, manufacture of building materials, testing standard tests, masonry, silicate based materials, cement (Portland), timber and wood based products, laminates, bituminous materials, paints, varnishes. **Estimating, Costing and Valuation**: Estimate, analysis of rates, methods and unit of measurement, Bar bending schedule, Centre line method, Steel Truss, Piles and pile-caps. Valuation– methods of valuation, Value and cost, scrap value, salvage value, assessed value, sinking fund, depreciation and obsolescence. **Surveying**: Principles of surveying, measurement of distance, chain surveying, compass traversing, bearings, local attraction, plane table surveying, theodolite traversing, , Levelling, Definition of terms used in levelling, contouring, curvature and refraction corrections, tachometric survey, earth work calculation, advanced surveying equipment. **Soil Mechanics**: Two phase diagram, Volume mass relationship, unit weights, density index, Grain size distribution curves, Index properties of soils, Atterberg's limits, USCS soil classification and plasticity chart. Permeability of soil, coefficient of permeability, effective stress, consolidation of soils, Settlement calculation. Shear strength of soils, direct shear test, Vane shear test, Triaxial test. Soil compaction, Maximum dry density and optimum moisture content, earth pressure theories, active and passive earth pressures, Bearing capacity of soils, plate load test, standard penetration test. **Transportation Engineering**: Types of pavements, pavement materials– aggregates and bitumen, different tests, flexible and rigid pavements– Bituminous construction, Rigid pavement joint, Highway drainage. Traffic Engineering– Different traffic survey, speed-flow-density and their interrelationships, intersections and interchanges, traffic signals, traffic operation, traffic signs and markings, road safety. **Environmental Engineering**: Quality of water, source of water supply, purification of water, distribution of water, need of sanitation, sewerage systems, circular sewer, oval sewer, sewer appurtenances, sewage treatments. Surface water drainage. Solid waste management– types, effects, engineered management system. Air pollution– pollutants, causes, effects, control. Noise pollution cause, health effects, control. **Structural Engineering**: Bending moment and shear force diagrams of simply supported, cantilever and over hanging beams. Moment of area and moment of inertia for rectangular & circular sections, bending moment and shear stress, slope deflection of simply supported and cantilever beams, critical load and columns, Torsion of circular section. RCC Design : RCC beams-flexural strength, shear strength, bond strength, design of singly reinforced and double reinforced beams, cantilever beams. T-beams, lintels. One way and two way slabs, isolated footings. Reinforced brick works, columns, staircases, retaining wall, water tanks (RCC design questions may be based on both Limit State and Working Stress methods). Steel Design : Steel design and construction of steel columns, beams roof trusses plate girders. **Concrete Technology**: Properties, cement aggregates, water cement ratio, workability, mix design, repair and maintenance of concrete structures, expansion joints.

C	Domain-Specific Knowledge (Elect)	**Electric circuits:** Network element; Circuit Law; Magnetic Circuit; Network Theorems; Transient response (dc and ac networks) and steady-state analysis; AC Circuits; Resonance; Complex power and power factor in ac circuits. R.M.S. value, average value calculation for any general periodic waveform. **Power System** : Generation, Transmission and Distribution of Power; Power System Stability; Symmetrical & Unsymmetrical Fault Analysis in Power System; Power System Protection; Switchgears, relays, etc; Cables & Insulators; Earthing **Control Systems:** Mathematical modelling & representation of systems; Transfer function; block diagrams & signal flow graphs; Transient & Steady-state analysis of LTI systems; Routh-Hurwitz and Nyquist criteria, Bode plots, Root loci; Compensators & Controllers; State space model & analysis. **Electrical Machines:** D.C. Machines; 1-phase and 3-phase transformers; Autotransformers; 1-phase and 3-phase Induction motors; Fractional Kilowatt Motors; Synchronous Machines; Variable Frequency Drives. **Electromagnetic Fields:** Static electric field; Static magnetic field; Electric and Magnetic fields in materials; Time varying electric and magnetic fields; Electromagnetic Waves. **Analog and Digital Electronics**: Working of various electronic devices e.g. P N Junction diodes, Transistors, BJT and JFET; Rectifiers; Amplifiers; Filters; Timers; combinatorial & sequential logic circuits; multiplexers & demultiplexers; Schmitt triggers; A/D and D/A converters; **Power Electronics:** Static V-I characteristics and firing/gating circuits for power electronics devices; Converter and Rectifiers; Power & Distortion Factor; pulse width modulation. **Electrical Measurement and Instruments:** Concepts of Measurements & Measurement Systems; Analog Electromechanical Instruments; Measurement of Power, Energy, Resistance, Inductance and Capacitance; Potentiometers; Instrument transformers, Miscellaneous Measuring Instruments-tri-vector meter, PF meter, frequency meters, digital voltmeters and multi-meters, oscilloscopes, CRO, Signal Generator; Earth Fault detection. **Utilization of Electrical Energy:** Illumination; Electric heating; Electric welding; Electroplating; Electric drives and motors; Energy-efficient & conservation techniques; Renewable energy. **Air-Conditioning:** General principles of Refrigeration & Air-conditioning; terminology, factors affecting A.C. Load; psychrometric chart; comfort air conditioning; general principles split/VRV/VRF air conditioners and chiller plants. Design/selection/sizing of material /equipment for internal and external electrical installations.

Written II (Subjective Type/Trade Test)

- Preparation of Estimate and Rate Analysis
- Technical Report Writing
- Incident Report Writing
- Trade Specific Questions
- Case Study

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Non-Teaching Staff Recruitment Advertisement No. IIITDWD/REC/NT/2025/128 dated 16-05-2025

Physical Training Instructor

All the invited candidates are required to appear in person for the Written Test, Physical fitness and Trade Test scheduled on (Will be intimated shortly)The venue for Written Test, Physical Fitness Test & Trade test is IIIT Dharwad, Karnataka.

Scheme of Examination:

Stage I - Written Test (MCQ Type & Subjective Type)

	Topics/Subjects	Total Marks	Duration
A	General Awareness	60 (A-20, B-40)	60 Minutes
	General English		
	Aptitude Test		
B	Domain Specific Knowledge		

Note: *0.25 Negative Marks for every wrong answer in the MCQ test.*

Stage II - Physical Fitness Test & Trade test

The shortlisted candidates after Stage I written test are required to take a physical fitness test and sport-specific trade test.

Physical Fitness Test

Norms for Men (12 minutes Run/Walk test)

Up to 30 years	Up to 40 years	Up to 45 years	Up to 50 years
1800 meters	1500 meters	1200 meters	800 meters

Norms for Women (12 minutes Run/Walk test)

Up to 30 years	Up to 40 years	Up to 45 years	Up to 50 years
1000 meters	800 meters	600 meters	400 meters

Trade Test

Sport-specific trade test in one of the following sports of his/her choice: Football, Volleyball, Badminton, Table Tennis, Tennis, Basketball, Hockey and Cricket.

The physical fitness test / trade test shall be for 60 marks.

Candidates securing minimum qualifying marks in the Stage I (Written Test) as per the benchmark decided by the Selection Committee shall be shortlisted for the Stage II (Physical Fitness Test & Trade test).

The final selection will be based on aggregate marks obtained from both the written tests, with a **weightage of 40% in Written Test I and 60% in Written Test II (Physical Fitness Test &**

Trade Test), subject to verification of the original documents and confirmation of eligibility criteria.

All candidates are required to produce a medical certificate certifying that he/she is medically fit for undertaking moderate to vigorous physical activity.

Broad area of syllabus of each section is as below, which is indicative in nature:

Topics/Subjects	**Broad Syllabus**
General Awareness	Knowledge of current affairs (national and international), sports, award and honours etc.
General English	Synonyms, grammar, sentence correction/completion, vocabulary, etc.
Aptitude Test	Reasoning, Quantitative Aptitude, and Data Interpretation etc
Domain Specific Knowledge	• Aims, Objectives and Principles of Physical Education • Physical fitness – Meaning, Definition, Components and Benefits • Organization and Administration in Physical Education and sports • General Training and Methods of Teaching in Sports • Sports Physiology, Sports Psychology & Sports Biomechanics • Tests and measurements in sports • Basic rules and regulations governing select sports like Football, Volleyball, Badminton, Table Tennis, Tennis, Basketball, Hockey and Cricket. • Health Education, wellness and yoga • Athletic diet, Nutrition, Injuries and First aid • Contemporary issues in sports

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Non-Teaching Staff Recruitment Advertisement No. IIITDWD/REC/NT/2025/128 dated 16-05-2025

Junior Assistant

All the applicants are required to appear in person for the Written Test scheduled on ……(Will be intimated shortly)…….. The venue for the Written Test is IIIT Dharwad, (Address), Dharwad, Karnataka. The final selection of the candidates will be based on the performance in the Written Test, subject to verification of the original documents and confirmation of eligibility criteria.

Scheme of Examination:

Written Test (Objective Type MCQ)

Part	Topics/Subjects	Total Marks	Duration
A	General Awareness	90 (A – 75, B-15)	120 Minutes
	English		
	Aptitude Test		
	Computer Awareness		
B	Basic understanding of Government Rules and Regulations		

Note: *0.25 Negative Marks for every wrong answer in the MCQ test.*

Broad area of syllabus of each section is as below:

Topics/Subjects	Broad Syllabus
General Awareness	Everyday applications of science, international organizations, geography, history (both Indian and foreign), economics, current affairs, sports, about Karnataka, etc.
English	Synonyms, grammar, sentence correction/completion, vocabulary, etc.
Aptitude Test	Reasoning, Quantitative Aptitude, and Data Interpretation.
Computer Awareness	Basic Computer Terminology, Computer Hardware and Software, MS Word and MS Excel, MIS, Storage and Operating Systems, Safety and Security of Computer Systems, E-mail and Internet Usage, Search Engines, Common AI tools for administration, etc.
Basic understanding of Government Rules and Regulations	Legal, RTI, leave rules, NPS, office procedures, Income Tax, GST, Constitution of India, Minimum Wages Act, PF and ESI, Banking Awareness, General Financial Rules 2017, Higher Education system in India, etc.

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भारतीय सूचना प्रौद्योगिकी संस्थान धारवाड़
INDIAN INSTITUTE OF INFORMATION TECHNOLOGY DHARWAD
[Institute of National Importance by Act of Parliament]

Non-Teaching Staff Recruitment Advertisement No. IIITDWD/REC/NT/2025/128 dated 16-05-2025

Junior Technician

All the shortlisted candidates are required to appear in person for the Written Test scheduled on (Will be intimated shortly)..... The venue for the Written Test (I & II) is IIIT Dharwad, (Address), Dharwad, Karnataka.

Scheme of Examination:

Written Test I (Objective Type MCQ)

Part	Topics/Subjects	Total Marks	Duration
A	General Awareness	60 (A – 20, B/C – 40)	60 Minutes
	Aptitude Test		
	English		
B	Domain-Specific Knowledge (CSE)		
C	Domain-Specific Knowledge (ECE/EE)		

Note: *0.25 Negative Marks for every wrong answer in the MCQ test.*

Written Test II (Subjective Type/ Trade Test)

Topics/Subjects	Total Marks	Duration
Domain Specific Subjective Question (basically linked to experiments)	40	45 Minutes

Part A of Written Test I is compulsory for all candidates. Candidates who chose the CSE domain must take Part B, while those who chose the ECE or EE domain must take Part C.

Candidates securing minimum qualifying marks in the Written Test I as per the benchmark decided by the Selection Committee shall be shortlisted for the Written Test II.

The final selection will be based on aggregate marks obtained from both the written tests with a **weightage of 40% in Written Test I and 60% in Written Test II,** subject to verification of the original documents and confirmation of eligibility criteria.

Broad area of syllabus of each section is as below, which is indicative in nature:

Written I

Part	Topics/Subjects	Broad Syllabus
A	General Awareness	Everyday applications of science, international organizations, geography, history (both Indian and foreign), economics, current affairs, sports, about Karnataka, etc.

	Aptitude Test	Reasoning, Quantitative Aptitude, and Data Interpretation.
	English	Synonyms, grammar, sentence correction/completion, vocabulary, etc.
B	Domain-Specific Knowledge (CSE)	**Foundational computer concepts** (basic computer hardware and software, operating system fundamentals (Windows and Linux), data representation, networking basics), **Operating Systems** (overview of OS concepts, process management, memory management, file systems, and security, with a focus on practical application through system calls and shell scripting), **Programming Fundamentals in C language** (data types, operators, control flow statements, functions, arrays), **Database Management Systems** (fundamental concepts and practical skills related to database design, management, and querying, relational algebra, SQL, and database design principles), **Web Technologies** (fundamentals of web development, including HTML, CSS, JavaScript, and potentially PHP), **Logic Design** (number systems, Boolean algebra, logic gates, combinational logic circuits like adders, multiplexers, etc., sequential logic circuits like flip-flops, registers, and counters)
C	Domain-Specific Knowledge (ECE/EE)	**Analog and Digital Electronics:** Conductors, Insulators, and Semiconductors. N and P type semiconductors. Diode, Zener diode, voltage regulation, Varistor and Thermistor. BJT: NPN and PNP, Transistor biasing, heat sink, Alpha and Beta- definitions, relation. CE input and output characteristics- cut off, saturation, and active regions. FET, MOSFET- Transistor and FET as a switch. Optoelectronic devices: Symbols, photo diode, opto isolator, photo voltaic cell, LED, LDR, LCD, opto coupler. OP-AMP and Timers: OPAMP–characteristics, CMRR, Slew rate, OPAMP-inverting and non-inverting, integrator, differentiator, summer, voltage follower, and comparator, Filters: low pass, high pass. Timers: LM 555, duty cycle, time constant, Astable and monostable multivibrator. Boolean Algebra**:** Binary Numbers, Hexadecimal number, binary addition, subtraction, binary multiplication and Division. Basic logic gates, Boolean identities, De Morgan's theorems, SOP, POS, Karnaugh Map, Half Adder, Full adder. Half-Subtractor, Full Subtractor, decoder, multiplexer, de-multiplexer, parity generator and checker. Logic Families: TTL, ECL, MOS and CMOS, INVERTER, NAND, NOR, Multiplexer, Decoder, 7 segment display decoder driver, Octal to Binary encoders, Decimal to BCD encoders, Latch, R-

		S, J-K, D flip flops, Edge triggered flip flops, shift registers, asynchronous and synchronous counters **Control System:** Linear Time invariant system, Laplace transform, transfer function. Mathematical Modelling: Integro-differential equations for electrical, mechanical systems. Time response analysis. Stability; Routh criterion, Root Locus. Frequency Response methods: Nyquist and Bode plots and criteria. Gain and phase margin. State space analysis and design. **Communications:** **A**mplitude modulation and demodulation, FM, PM, super heterodyne receivers. Transmitters for AM, FM, SSB, ISB systems, Antennas-HF, VHF, UHF and microwave antennas, Transmission lines –Twisted pair wires, coaxial cables and Wave guides, Introduction to RADAR, Satellite and Optical communication systems, Telephony, Telegraphy, Radio and TV transmission, PCM, DPCM, digital modulation schemes (ASK, PSK, FSK, QAM), bandwidth, SNR. Fundamentals of error correction. Sampling theorem, Pulse-Amplitude Modulation, Channel bandwidth. **Measurement and Instrumentation:** Generalized Measurement system: Accuracy, Precision, Fidelity, speed of response, static & dynamic performance characteristics. Principles and applications of ammeters, voltmeters, wattmeter's, energy meters, multimeters, and other measuring instruments. Methods for measuring voltage, current, power, energy, frequency, and phase angle. Signal generator and Function generator. Cathode Ray Oscilloscope, basic of CRO circuit and components. CRO for different measurement, Lissajous pattern. **Microprocessors and Applications:** Intel 8085A microprocessor, Register organization, Instruction sets, operand addressing modes, instruction cycle, machine cycle, Timing diagram, Mapping of I/O to microprocessor. Programming: Concept of Micro and Macro programming, arithmetic and logical computations, block of data moving looping, counting, time delaying operations. Stack and subroutines, stack memory. Interrupts and Peripherals: Vectored interrupts, maskable and unmaskable interrupts. software and hardware interrupts. Usage of RIM, and SIM instructions. Peripherals like Intel 8255, 8257, 8254 and 8251. Interfacing of I/O to microprocessor. **Transformer:** Concepts of magnetic flux, mmf, reluctance, electromagnetic induction, and transformers. Single phase transformer: equivalent circuit, phasor diagram, open circuit and short

		circuit tests, efficiency; Auto-transformer, Three phase transformer. **Circuits and Electrical machines:** Basic circuit theory, basic circuit theorems and applications, circuits with diodes, transistors and operational amplifiers, magnetic circuit basics, Magnetic materials and magnetization, Faraday's law and Lenz's law, ac and dc machines basics (motor and generator), static and rotating machines, Basic electrical machine equivalent circuits and important operating characteristics (ac and dc), induction motors (single-phase and three-phase), synchronous machines (alternators and motors), and fractional kilowatt motors, basic tests on ac and dc electrical machines and standard operating procedures, electrical machine windings and basic electrical machine constructional aspects (ac and dc). **Maintenance, Troubleshooting and Electrical Safety:** Basic troubleshooting of common electrical faults and maintenance procedures for electrical equipment. Safety procedures, grounding, insulation, and precautions for working with electrical equipment.

Written II

- Subjective Question/Practical Test linked to lab experiments, etc.

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