

गोंय विद्यापीठ

ताळगांव पठार,

गोंय - ४०३ २०६

फोन : + ९१ - ८६६९६०९०४८



(Accredited by NAAC with Grade A+)

Goa University

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GU/Admn.(NT)/RSNT/50/2026/1561

Date: 15/05/2026

GENERAL INSTRUCTIONS AND SCHEME OF EXAMINATION

(Ref. No. GU/Admn.(NT)/RSNT/50/2025/680 dated 13/10/2025.)

The Candidates are requested to appear for a written test scheduled on 14.06.2026 (Sunday) from 10.30 a.m. to 12.30 p.m. for the post of Junior Engineer (Electrical) in the Goa University. Venue will be intimated on the Admit Card.

SCHEME OF EXAMINATION

The Written Test consist of 100 questions carrying one marks each.

- The Written Test paper will be of 2 hours duration. All Questions will be compulsory and they will be of Multiple Choice Question (MCQ) type. Candidate will have to mark the correct answer on the OMR sheet. Instructions for filling the OMR sheet shall be provided on the Admit Card. Candidates shall carry black ball pen for filling the OMR sheet.
- Each correct answer shall be awarded 1 mark and an incorrect answer shall be awarded negative $\frac{1}{4}$ mark. An un-attempted question shall be awarded zero mark.

The Written Test Question paper shall consist of four main Sections – SECTION A, SECTION B, SECTION C and SECTION D. SECTION A will be of 20 marks, SECTION B will be of 20 marks, SECTION C will be of 30 marks and SECTION D will be of 30 marks.

Short listing Criteria based on Performance in Written Test

Only those candidates who score a minimum of 40% marks in Section A (Knowledge of Konkani Language) will be qualified for short listing.

The qualified candidates will be shortlisted based on the performance in the written test. The merit list will be prepared by sorting the total score obtained by the candidates in the Written Test in descending order.

In the event of tie, such cases will be resolved by applying following criteria in the order one after another, till the tie is resolved:

- I. Higher Score in Section B
- II. Higher Score in Section C
- III. Higher Score in Section D
- IV. Date of Birth, with older candidate given higher preference.

The selection of the shortlisted candidates will be subject to the condition that they fulfil the eligibility criteria as per the Information Brochure of the advertisement.

The candidates are required to remain present for the written test sharp at 10.00 a.m. at their respective venue viz. block and room along with the hall ticket as per instructions given therein.

No interview will be conducted for the final selection of the candidates.

Hall ticket will be generated on the e-samarth portal and candidate will be informed of the same through their email id registered at the time of filling up application form. Candidates are required to bring the printout (Hard copy) of the hall ticket. Candidates must also carry any valid Government approved photo identity card. (Adhaar/PAN/Voter's ID/Driving License /Passport/Student ID etc.) Any assistance if required, the candidate may contact on 8669609022/ 8669609069 or email recruit.nt@unigoa.ac.in.

No TA/DA will be paid for attending the written test.

No intimation in hard copy will be sent to the individual.

Sd/
(Prof. S.N. Dhuri)
REGISTRAR

Syllabus for written test to the post of Junior Engineer, Goa University

SECTION A (20 Marks)

A.1 Knowledge of Konkani

(20)

- A. कोंकणीव्याकरण: नाम, सर्वनाम, विशेषण, क्रियापद, वाक्यविचार, लिंग, वचन, काळ, विभक्ती (Konkani Grammar)
- B. कोंकणी शुद्धलेखनाचे नेम (Konkani Orthography)
- C. कोंकणी आंकडे (Konkani Numbers)
- D. कार्यालयीन: इंग्लीश कोंकणी, कोंकणी इंगल्शीउतरावळ (Administrative Terminology)

SECTION B (20 Marks)

B.1 Knowledge of English

(10)

Understanding and knowledge of English Language, vocabulary, grammar, sentence structure, spot the error, fill in the blanks, synonyms, antonyms, spelling/detecting mis-spelt words, idioms & phrases, one word substitution, improvement of sentences, active/passive voice of verbs, conversion into direct/indirect narration, shuffling of sentence parts, shuffling of sentences in a passage, close passage & comprehension passage.

B.2 General Awareness:

(10)

State affairs, national Affairs, International Affairs, Economy and Business, Science and Technology, Sports and Games, Environment and Ecology, Art and Culture, Important Days, Goa University Statutes and Ordinances.

SECTION C (30 Marks)

C.1 Mathematics: -

(10)

Co-ordinate Geometry/Analytic Geometry: Applications of Co-ordinate Geometry, Coordinate systems, Straight Line- Distance between two points, Internal & external division of a line, Area of triangle, Slope of line, Angle between two lines, Various forms of equation of line-parallel to axis, point-slope form, slope intercept form, two point form, intercepts form & normal form, General equation of line, Distance of a point from a line, Equations of circle, Equations of tangent & normal to circle.

Trigonometry: Applications of Trigonometry, Radian, Radian & degree, Area of sector & length of an arc, Trigonometric ratios of any angle & Trigonometric identities, Trigonometric ratio of allied angles, compound angles, & Multiple angles, Sum & product formulae, Sine, Cosine rules, Solution of triangles.

Matrices: Definition and Notations, Elements of Matrix, Types of matrices, Special matrices -Square, Diagonal, Row, Column, Scalar Unit, Zero or null, upper and lower triangular matrices, Symmetric, Skew symmetric matrices Addition, Subtraction and multiplication of matrices, Inverse of matrix using Adjoint method only Application of matrices in solving simultaneous equations in 2 or 3 variable.

C.2: Applied Physics

(10)

Properties of matter: Definition of Elasticity, Stress, Strain and Elastic limit, Hooke's Law, Definition of Young's modulus, Bulk modulus, Rigidity modulus, Determination of Young's modulus by Searle's method, Behaviour of wire under continuously increasing stress, Definition of Yield Point, Breaking Stress, and Factor Of Safety, Adhesive and Cohesive forces, Angle of contact, Concept and definition of Surface Tension, Surface Tension by Capillary rise method, Application of Surface Tension, Definition and explanation of Viscosity, Statement of Newton's law of viscosity, Terminal Velocity, Stokes Law, Determination of Viscosity by Stokes method, Streamlined and Turbulent flow, Definition of Critical Velocity, Reynolds Number.

Heat: Definition of specific heat and units of specific heat, Modes of transfer of heat transfer, Conduction, Convection and Radiation, Law of thermal conductivity, Definition of coefficient of thermal conductivity, Determination of coefficient of thermal conductivity of a good conductor, Statement of Charles's law, Boyle's law and Gay Lussac's law, Derivation of general gas equation.

Electrostatics: Coulomb's Law of Electrostatics, Electric Field, Intensity of Electric Field, Electric Potential and its unit, Potential difference between two points (no derivation), Potential of a sphere, Potential of Earth, Definition and units of Capacitance, Principle of Capacitor, Capacitors in series, Capacitors in Parallel.

Current Electricity: Ohms law, General equation of Ohms law, Factors affecting resistance, Specific resistance and units, Effect of temperature on resistance, Law of resistance in series and parallel, Internal resistance and EMF of the cell, Potential drop along a uniform wire, Principle of potentiometer, Comparison of EMF of a given cell by single cell method, Comparison of EMF of a given cell by sum and difference method, Use of meter bridge to determine the unknown resistance.

C.3 Logical Reasoning and Numerical Ability

(10)

Coding Decoding, Blood Relations, Seating Arrangements (Circular, Linear), Grouping and Selection. Verbal Classification, Analogies, Statement and Assumption, Statement and Conclusion, Letter and Symbol Series, Artificial Language.

Numerical computation, Numerical estimation, Numerical reasoning and Data interpretation, Logical reasoning, Patterns.

SECTION D (30 Marks)

D.1: Electrical Machines

Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests, regulation and efficiency; Three-phase transformers: connections, vector groups, parallel operation; Auto-transformer, Electromechanical energy conversion principles; DC machines: separately excited, series and shunt, motoring and generating mode of operation and their characteristics, speed control of de motors; Three-phase induction machines: principle of operation, types, performance, torque-speed characteristics, no-load and blocked-rotor tests, equivalent circuit, starting and speed control: Operating principle of single-phase induction motors; Synchronous machines: cylindrical and salient pole machines, performance and characteristics, regulation and parallel operation of generators. starting of synchronous motors: Types of losses and efficiency calculations of electric machines

D. 2: Power Systems

Basic concepts of electrical power generation, ac and de transmission concepts, performance of transmission lines and cables, Economic Load Dispatch, Series and shunt compensation, insulators, Distribution systems, Per-unit quantities, Voltage and Frequency control, Power factor correction, Symmetrical components, Symmetrical and unsymmetrical fault analysis, Principles of over- current, differential, directional and distance protection, Circuit breakers, System stability concepts.

D. 3: Electrical and Electronic Measurements

Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor, Instrument transformers, Digital voltmeters and multimeters, Phase, Time and Frequency measurement, Oscilloscopes, Error analysis.

D. 4: Analog and Digital Electronics

Simple diode circuits: clipping, clamping, rectifiers, Amplifiers: biasing, equivalent circuit and frequency response, oscillators and feedback amplifiers; operational amplifiers: characteristics and applications; single stage active filters, Active Filters: timers, combinatorial and sequential logic circuits, multiplexers, demultiplexers, Schmitt triggers, sample and hold circuits, A/D and D/A converters.
