



GOA UNIVERSITY

Taleigao Plateau, Goa - 403 206 INDIA

Established by State Legislature by Notification No. LD/10/7/84 (D) of year 1984

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The Candidates are requested to appear for a written test scheduled on 27.11.2018 at 11.00 a.m. to 1.00 p.m. for the post of Junior Programmer in the Goa University. Refer Goa University website www.unigoa.ac.in for venue three days before the written test.

The candidates will be shortlisted based on the performance in the written test. Only those candidates who secure 40% in Section A (Konkani Language) will be considered for shortlisting. 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.1 (Problem Solving, Programming and Data Structures)
- (ii) Higher Score in Section B.2 (Software Installation and Software Development)
- (iii) Higher Score in Section A.2 (English Language)
- (iv) Higher Score in Section A.3 (Basic Mathematics)
- (v) Higher Score in Section A.4 (Basic Computer Concepts)
- (vi) 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.

You are required to remain present for the written test sharp at 10.00 a.m. at your respective venue viz block and room alongwith the hall ticket as per instructions given therein.

No interview will be conducted for the final selection of the candidates. The performance in the written test will be basis for the merit list and final selection.

Hall ticket to be downloaded through login portal as registered at the time of filling up application form. Any assistance if required, you may contact on 8669609022/8669609069 or email arnonteach@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. Y. V. Reddy)
REGISTRAR

Details about the Written Test for the Post of “Junior Programmer” at Goa University

I) Question Paper Format

1. The Written Test Question paper will be of total 100 marks 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 separately.
2. The Written Test Question paper shall consist of two main Sections – SECTION A and SECTION B. SECTION A will be of 40 marks and SECTION B of 60 marks.
3. SECTION A shall have the following sub-sections and consist of total 40 Questions. Each correct answer shall be awarded +1 mark and an incorrect answer shall be awarded – $\frac{1}{4}$ th mark. An un-attempted question shall be awarded 0 mark.

A.1 Konkani Language (10 questions)

A.2 English Language (10 questions)

A.3 Basic Mathematics (10 questions)

A.4 Basic Computer Concepts (10 questions)

4. SECTION B shall comprise of the following sub-sections and consist of total 30 Questions. Each correct answer shall be awarded +2 marks and an incorrect answer shall be awarded – $\frac{1}{2}$ mark. An un-attempted question shall be awarded 0 mark.

B.1 Problem Solving, Programming and Data Structures (20 questions)

B.2 Software Installation and Software Development (10 questions)

II) Shortlisting Criteria based on Performance in Written Test

Note: Only those candidates who score a minimum of 4 marks out of 10 in Section A.1 (40% in Konkani Language) will be considered for shortlisting.

The list will be prepared by sorting in descending order, the total score obtained by the candidates in the Written Test.

Tie-Breaking Rules - In the event of a tie, such cases will be resolved by giving higher preference to candidates score in the following sub-sections one after another in the sequence given below, till the tie is resolved -

- (vii) Higher Score in Section B.1 (Problem Solving, Programming and Data Structures)
- (viii) Higher Score in Section B.2 (Software Installation and Software Development)
- (ix) Higher Score in Section A.2 (English Language)
- (x) Higher Score in Section A.3 (Basic Mathematics)
- (xi) Higher Score in Section A.4 (Basic Computer Concepts)
- (xii) Date of Birth, with older candidate given higher preference

III) Syllabus

SECTION A

A.1 Konkani Language (Basic Knowledge)

1. कोंकणी व्याकरण : लींग, एकवचन, भोववचन, काळ, वाक्यविचार (Konkani Grammar)
2. शुध्दलेखनाचे नेम (Konkani Orthography)
3. कोंकणी आंकडे. (Konkani Numbers)
4. कार्यालयीन इंग्लीश - कोंकणी उतरावळ. (Administrative Terminology)

A.2 English Language:

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.

A.3 Basic Mathematics: Numerical computation, Numerical estimation, Numerical reasoning and Data interpretation.

A.4 Basic Computer Concepts: Computer Basics, Data Representation, Binary Arithmetic, Computer Architecture, Computer Language, Operating System Basics.

SECTION B

B.1 Problem Solving, Programming and Data Structures

Problem Solving Process - Hierarchy charts to plan the program design, Algorithm Testing using code walkthrough, Efficiency of Algorithms, Data Verification v/s Validation. Module design – Cohesion – Coupling. Algorithms - Iterative versus recursive style - Modular Programming - Structured Programming. Sorting Algorithms, Searching Algorithms. Evolution of Programming Languages: Overview of 'C' language, Constants, Variables and Data Types; Operators and Expressions; Managing Input/Output Operations; Decision Making – Branching - if, Nested if – Switch – goto; Looping- While, do, for statements. Arrays – static, dynamic, User defined Functions – Recursion; Data Structures: Linear Data Structures: Array applications and representation: Polynomials, Sparse matrices, String-pattern Matching, Linked Lists: Linked list applications, Representation and Implementation, Doubly linked list, Circular linked list, Stack and Queues. Nonlinear Data Structures: Binary Tree, Tree traversals and applications, Binary Heap, Binary Search Trees, AVL Trees, M-way Search Trees, B-trees, B+-trees, Graphs: Graph representations; Graph Traversals

B.2 Software Installation and Software Development

Software Installation and Troubleshooting: Windows and Linux Platform. Database Concepts: SQL, Views & Queries using SQL, Specifying Constraints & Indexes in SQL, Embedded SQL, Dynamic SQL, Triggers and Stored Procedures. Software Engineering Concepts: Software Quality, Software Process, Characteristics of Software Process. Software Development Cycle, Software development methodologies: Waterfall, Prototyping, and Agile. Software Testing Techniques and Tools, Computer Networks, Web Technologies, System Security basic Concepts, Current Software trends.