

**Final Syllabus and Scheme for the Post of Junior Laboratory Assistant  
(Technical) Digital & Computing Services- Software Development &  
Automation  
Post Code- 017**

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There will be two-stage examination.

**Stage I:** Written Examination (Objective type- MCQ)

**Stage II:** Skill/Trade Test

**1. Programming Fundamentals:**

Variables, data types, operators, flow control statements and loops; functions/methods including parameters and return types; basics of recursion; error and exception handling.

**2. Data Structures:**

Arrays, lists, and strings; stacks, queues, and linked lists; hash tables/maps/dictionaries; trees (binary trees and binary search trees); basic graph concepts.

**3. Algorithms:**

Searching techniques (linear and binary search); sorting techniques (bubble, selection, insertion, merge, and quick sort); basic algorithmic complexity and Big O notation.

**4. Object-Oriented Programming:**

Concepts of classes and objects; encapsulation, abstraction, inheritance, and polymorphism; constructors and destructors; interfaces and abstract classes.

**5. Databases:**

Relational database concepts including tables, primary keys, and foreign keys; basic SQL commands (SELECT, INSERT, UPDATE, DELETE); simple joins, aggregation, and ordering.

**6. Web and Network Basics:**

Fundamentals of HTTP/HTTPS; client-server architecture; basics of RESTful APIs; introductory concepts of HTML, PHP, CSS, and JavaScript.

**7. Linux Basics:**

Linux directory structure; users and groups; file permissions (read, write, execute); commonly used Linux commands; package management tools (apt, yum, dnf, dpkg); basics of shell scripting.

## **Important Instructions for candidates:**

### **General information about the exam:**

- The MCQs have negative marking for wrong answers. The unanswered questions will not be considered for evaluation. (*i.e.*, no marks will be awarded for any question not attempted).
- Only one best-suited answer has to be given for any MCQ. More than one answer will be treated as wrong answer.
- Use of only blue or black ballpoint pen is permitted to answer the questions and fill the form in the exam hall. Use of ink pen/gel pen/pencil/whitener is not permitted.
- Use of calculator, cell phones, log book, periodic table, and any type of electronic device etc., are strictly prohibited.
- Involvement in any malpractices will lead to disqualification
- Any additional instructions given during the selection process must be adhered/complied.

### **Final Selection:**

- Examinations for Stage-I and Stage-II will be conducted for all the candidates or as decided by the selection committee.
- Final selection will be made on the scores obtained in the Stage-I, as the Stage –II is of qualifying nature. But if a candidate fails to qualify in Stage-II, her/his candidature will not be considered further.
- Please note that for consideration in the merit list, a candidate has to secure minimum marks fixed by the selection committee in both exams at Stage-I and Stage-II – failing which institute will not make an offer of appointment even if vacancies go unfilled.