



CENTRAL UNIVERSITY OF TAMIL NADU
Notification No.: CUTN/NT/01/2026 dated 01.01.2026
Syllabus for the Post of Laboratory Assistant

SINGLE STAGE TEST

| Part | Subject (Multiple Choice Questions (MCQ)) | Maximum Marks | Duration |
|---------|--|---------------|----------|
| Part I | General Knowledge & Current Events, General English, Numerical Aptitude, General Intelligence & Reasoning. | 25 | 2 hrs |
| Part II | Domain Knowledge | 75 | |

- Minimum qualifying marks to be secured shall be 50 marks

PART – I (25 MARKS)

General Knowledge: Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Current Affairs-India & World, Current Events,

Reasoning Ability: Analogies – Semantic Analogy, Symbolic / Number Analogy, Figural Analogy, Similarities & Differences, Word building, Relationship concepts, Arithmetic Number series – Semantic Series, Number Series, Coding & decoding – Small & Capital letters/ numbers coding, decoding & classification.

Numerical Ability: Number System, Time & Work, Averages, Percentages, Profit & Loss, Ratio & Proportion, Simple & Compound Interest, Time & Distance

General English: Comprehension, One-word substitution, Synonyms & Antonyms, Spelling error, spotting error in sentences, Grammar- Noun, Pronoun, Adjective, Verb, Preposition, Conjunction, Use of ‘A’, ‘AN’ & ‘The’, Idioms & Phrases, Language Proficiency.

PART – II (75 MARKS)

PHYSICS

Electrostatics, Current Electricity, Magnetism and Magnetic Effects of Electric Current, Electromagnetic Induction and Alternating Current, Electromagnetic Waves, Optics, Atomic and Nuclear Physics

CHEMISTRY

I. Physical Chemistry

Preparation of standard solutions and calculations involving molarity, molality, normality, weight percentage and ppm; solubility concepts; colligative properties and determination of molar mass with numerical problems; fundamentals of redox reactions including oxidation, reduction and oxidation number; acid–base chemistry covering ionic product of water, pH scale and pH measurement, buffer solutions, common ion effect, solubility product and hydrolysis of salts as applicable to analytical chemistry.

II. Inorganic Chemistry

Basic concepts of chemical bonding and molecular structure, Lewis structures, molecular geometry, hybridization, hydrogen bonding and periodic trends; Transition metals-general properties, oxidation states, colour, magnetic and catalytic properties; preparation and properties of potassium dichromate and potassium permanganate; coordination compounds-ligands, coordination number, nomenclature, isomerism and applications in qualitative and quantitative analysis.

III. Organic Chemistry

Structural representations, classification, nomenclature and isomerism of organic compounds; functional group identification; fundamental concepts of organic reaction mechanisms; laboratory techniques such as purification by recrystallisation and distillation; qualitative and quantitative analysis of organic compounds.

IV. Laboratory Practices

Laboratory safety and hazard management; handling and maintenance of chemicals, glassware and instruments; good laboratory practices relevant to chemistry laboratories.

MICROBIOLOGY

I. General Microbiology:

History and scope of microbiology, laboratory safety and personal protection, sterilisation and disinfection-different methods and their applications, biomedical waste management, guidelines on laboratory cultures and waste management.

II. Microscopes:

compound microscope, Darkfield, phase contrast and fluorescence microscope.

III. Bacteriology:

Morphology of bacteria, growth requirements, culture media, pH adjustment, sterilisation and storage of media, culture methods, staining methods, methods to study of bacteria, anti-microbial susceptibility testing.

IV Biochemistry:

Proteins, protein structure and function, carbohydrates, nucleic acids, fats, enzymes, Michaelis-Menten Kinetics.

V. Molecular Biology:

Central dogma of molecular biology, DNA, chromosomes, genome, DNA replication and repair, transcription and translation.

VI Immunology:

Innate and adaptive immune systems and their components.

VII Cell Biology:

Cell structure and function, cell membrane, respiration, photosynthesis, Cell replication, Monod kinetics, cell signalling.

VIII Biological instrumentation:

Chromatographic techniques, microscopic techniques, spectroscopy and crystallography.
