



File No.NITC/RECT/2025/01

Dated: 15.07.2026

Indicative Syllabus for the various Technical Posts notified vide Advt. No. NITC/NT/2026/03

1. Executive Engineer (Civil)

Part-A

General Aptitude, Reasoning, English and Current Affairs.

Part-B

Concepts regarding Building Planning and Construction including building bye-laws, building services, foundations, masonry, steel, reinforced cement concrete, finishing, waterproofing, modern materials, repair, rehabilitation and maintenance.

Concepts related to water supply Engineering including sources, intakes, demand estimation, water quality, treatment, maintenance, conveyance, distribution, rural water supply.

Concepts related to wastewater engineering and pollution control including Sewerage systems, sewage treatment, recycling, reuse, rural sanitation, air and noise pollution, monitoring, standards.

Concepts related to Waste Management, Disaster Management, Structural Engineering, Geotechnical Engineering etc.

Tender Procedures including Estimation, costing and contracts

Relevant GoI Rules including GFR, Arbitration & Conciliation, RTI, GRIHA and provisions related to green building, waste management, waste to energy, CPCB/EPA guidelines, disaster management, labour welfare, estate management, Public Premises (Eviction of Unauthorised Occupants) Act, 1971.

Human Resource Management concepts related to Conflict management, team management and decision-making

Knowledge on softwares like AutoCAD, STAAD Pro, ETABS, Revit (BIM), Primavera P6/MS Project.

2. Technical Officer (Computer Science Engg./ Computer Engg./ Computer Networking)

Part-A

General Aptitude, Reasoning, English and Current Affairs.

Part-B

Concepts related to Programming in C including data types, operators, I/O, arrays, strings, functions, recursion, header files, text file operations.

Concepts related to Data Structures including arrays, linked lists, stacks, queues, linear/binary search, sorting (bubble, insertion, merge, quick)



Concepts related to Computer Organization including CPU, memory, buses, SRAM, DRAM, cache, MMU, virtual memory, paging, TLB, I/O, peripherals, interfaces

Linux Operating System including user/directory/file/ process management, commands, filters, text editors, shell scripting, swapping, arguments

Web Design and Programming Concepts including HTML (tags, forms, frames), CSS (styles, animations, layouts), PHP (variables, loops, functions, sessions, cookies)

System Administration Concepts including workstation/ server/data center management, virtualization, file systems, partitioning, boot processes, active directory, firewall, backup, package management

Concepts related to Computer Networks and Network Services including architecture, protocol models, transmission media, DNS, DHCP, authentication, directory/ email/file services, VoIP, WWW, SNMP, monitoring

Computer Hardware and Servicing Concepts related to including motherboards, chipsets, BIOS, memory, hard disks, SSDs, peripherals, displays, SMPS, troubleshooting, booting

Public Procurement including procedures, specifications, vendor evaluation, GFR 2017, GeM, tendering, contracts, warranty, AMC/CMC, inventory, asset management, disposal, audit compliance.

3. Technical Officer (Electronics Engg.)

Part-A

General Aptitude, Reasoning, English and Current Affairs.

Part-B

Concepts related to Electronics including diode circuits, operational amplifiers, BJTs, MOSFETs, logic circuits, multiplexers, demultiplexers, Schmitt triggers, converters

Concepts related to Instrumentation including bridges, potentiometers, measurement, transformers, voltmeters, multimeters, generators, oscilloscopes, data acquisition

Power Engineering Concepts including three phase circuits, power factor, generation, transmission, distribution, circuit breakers, transformers, machines, rectifiers, SMPS, inverter

Concepts related RF and Optics including laser safety classification, optical fiber, connectors, passive devices, detectors, spectrum analyzer

Public Procurement including procurement procedures, GFR 2017, GeM, tendering, contract management, inventory, asset management, audit compliance

Concepts related Software, Computers and Networking including hardware, computer networking, operating systems, website management, programming, instrument automation, system integration-

Lab Technology and Management Concepts including clean room management, lab safety protocols, diagnostics, micro fabrication, characterization.



4. Technical Officer (Chemical Engg./Chemistry/ Chemical Sciences)

Part-A

General Aptitude, Reasoning, English and Current Affairs.

Part-B

Concepts related to Chemical Engineering Fundamentals including material/energy balance, fluid mechanics, heat/mass transfer, thermodynamics, reaction engineering, process calculations/control, unit operations, process safety

Concepts related to Physical Chemistry including thermodynamics, equilibria, electrochemistry, kinetics, surface chemistry, adsorption, catalysis, colloids, solutions, pH, buffer systems, conductance, mechanisms

Concepts related to Organic Chemistry including structure, bonding, stereochemistry, mechanisms, aromatic/heterocyclic compounds, polymers, spectroscopy, industrial chemicals, dyes, pharmaceuticals, petrochemicals

Concepts related to Inorganic Chemistry including bonding, coordination, organometallics, transition metals, solid-state, bioinorganic, materials chemistry, corrosion, nanomaterials

Concepts related to Analytical Chemistry including volumetric/gravimetric/instrumental analysis, sampling, calibration, validation, quality assurance, uncertainty analysis, GLP, NABL

Materials Science and Characterization Concepts including structure, defects, phase diagrams, polymers, ceramics, composites, metallurgy, XRD, SEM, TEM, AFM, particle size, BET, zeta potential, rheology

Spectroscopy and Advanced Instrumentation Concepts including UV-Vis, FTIR, Raman, Fluorescence, AAS, ICP-OES/MS, NMR, MS, XPS, GC, HPLC, LC-MS, GC-MS, CHN, DSC, TGA, DTA, calibration, troubleshooting

Public Procurement including Procedures, planning, specifications, vendor evaluation, GFR 2017, GeM, tendering, contracts, warranty, AMC/CMC, inventory, asset management, disposal, audit compliance

Lab Technology and Management Concepts including clean room, safety protocols, chillers, pumps, earthing, power supplies, diagnostics, debugging, micro fabrication, characterization.

15/07/2026
Dean (FSW)