



15th September, 2026

**IMPORTANT INFORMATION TO THE CANDIDATES APPLIED FOR THE
POST OF TECHNICAL ASSISTANT AT NIT PATNA AGAINST
ADVERTISEMENT No. NITP/Rect-NT/04/2026**

Selection Process

Selection Process for the post of Technical Assistant will consist of two stages as detailed below:

- (a) **Stage-I:** Multiple Choice Question (MCQ) Based Test
- (b) **Physical Document verification**
- (c) **Stage-II:** Trade Test [Qualifying in nature]. Only for those who are successful after Stage-I.

The candidates are required to report for the MCQ Test (Stage-I) on **24.10.2026 at 9:00AM** and the Trade Test (Stage-II) will be held on **25.10.2026 at 9:00 AM**. Both the Tests will be held at NIT Patna, Ashok Rajpath Campus. Late comers will not be allowed to appear in the test.

Scheme of Examination

(a) Stage-I [Multiple Choice Question (MCQ) Based Test]

- The Test will be of 90 Minutes duration and will be Computer Based Test (CBT).
- The maximum marks for the Test will be 100 having 100 Multiple Choice Questions (MCQs) and will comprise of 30 questions from Part A of the Syllabus and 70 questions from Part B of the Syllabus.
- All questions will carry equal marks and there will be no negative marking.
- Minimum Qualifying Marks: [UR/EWS/OBC(NCL):40%; SC/ST/PwD: 35%].
- Based on the marks obtained in the MCQ Test (Stage-I), candidates will be shortlisted for Trade Test (Stage-II) in the ratio of 1:10 for trade-wise and category-wise vacancies.

There will be a detailed document verification of the candidates called for Trade Test (Stage-II). Only those candidates who are found eligible after the document verification will be allowed to appear in the Trade Test (Stage-II).

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(b) Stage-II [Trade Test]

- Only those who are shortlisted from [Stage-I], and have been found eligible after the document verification will be allowed to appear in the Trade Test.
- Trade Test will be specific to the department/section/Trade for which the applicant has applied.
- The Trade Test will be of 90 Minutes duration.
- The Trade Test will be qualifying in nature i.e. the candidates will be assessed as either “Qualified” or “Not Qualified”, and will have no weightage in preparing the final merit list.

Final Selection

- (a) Only those candidates who qualify in the Trade Test (Stage-II) will be considered for the final merit list.
- (b) **The final merit list will be prepared on the basis of marks obtained by the candidates in the MCQ Test (Stage-I) only.**

Preparation of final merit list:

- (i) If there is a Un-reserved seat for a particular trade then

- A) a list of candidates for unreserved posts, if any will be prepared in the order of merit. This list will also include reserved category candidates securing position in the merit at par with Un-reserved category candidates;
- B) a separate list for EWS, OBC(NCL), OBC(NCL)-PwD SC and ST candidates will be drawn in the order of merit excluding the name of reserved category candidates who figure in the unreserved category list on their own merit without relaxed standard.

Else,

the merit list will be prepared for each category.



- (ii) **Tie-breaking in final merit:** the inter-se merit of candidates securing same marks will be decided in the following manner:
1. Marks secured in the MCQ test (Stage-I) (Candidates securing higher marks will be ranked higher). If the marks obtained in the MCQ test are same, then;
 2. Marks Scored in MCQ Test from Part B of the Syllabus. If the marks obtained in the MCQ Test from Part B of the Syllabus are same, then;
 3. Date of Birth (Candidates higher in age will be ranked higher). If the date of birth is also same, then;
 4. Alphabetical order of the name recorded in matriculation or equivalent certificate will be considered.
- (c) The test materials, if any, will be taken back from the candidates.
- (d) No TA/DA shall be paid for appearing in the tests.
- (e) Any request for change of date of test(s) will not be entertained. The Institute reserves the right of cancelling the candidature of any candidate found indulging in any malpractice, i.e., hiding any material information, misrepresentation of facts or canvassing for candidature.
- (f) The information for test will be sent on the email mentioned in the application form and Institute shall not be held responsible for the non-receipt of information on the email address mentioned in the application form.
- (g) Candidates have been allowed to appear in the MCQ Test **provisionally without** verification of Mark sheets/Degrees/Certificates/ validity of Certificates etc.
- (h) Mere appearance in the Test(s) or qualifying in the Test does not entitle a candidate to be considered for appointment unless he/she fulfils the eligibility conditions.
- (i) The candidates must carry a valid Aadhar Card for appearing in the Test.
- (j) **APPLICANTS MUST FULLY SATISFY THEMSELVES ABOUT THEIR ELIGIBILITY AS PRESCRIBED IN THE ADVERTISEMENT, BEFORE APPEARING IN THE TEST.** If an



applicant is inadvertently allowed to appear in the Test who otherwise does not fulfil the eligibility requirement, he/she cannot, at a later date, use that as a right to claim that he/she meets the eligibility requirements. The Institute reserves the right to cancel the candidature of a candidate/or cancel the appointment if it is found that:

- (a) **Minimum eligibility requirements are not fulfilled.**
- (b) **False documents submitted**
- (c) **Any other similar valid reason.**

Syllabus

Candidates may note that the Syllabus given below is not exhaustive but indicative only.

PART A (Common for all Trades)

1. Aptitude - Averages, Number System, Profit and Loss, Time and Work, Problems on Trains, Compound Interest, Decimal Fractions, Calendar, Area, Problems on Numbers, Square Root and Cube Root, Boats and Streams, Probability, Interest, Percentage, Ratio, Time and Distance, Problems on Ages, Partnership, Clock, Simplifications, Volume and Surface, Problems on H.C.F and L.C.M, Logarithm, Chain Rule, Pipes and Cistern, Odd Man Out and Series, Height and Distance
2. Reasoning - Number Series Compilation, Missing Number Finding, Continuous Pattern Series, Direction Sense Test, Puzzle, Verbal Classification, Matching Definitions, Logical Deduction, Series Compilations, Classification, Missing Character Finding, Odd Man Out, Blood Relations, Analogy, Coding and Decoding, Truth Verification of The Statement, Syllogisms, Analogies, Verbal Reasoning, Statement And Conclusions, Letter and Symbol Series, Logical Problems, Logical Sequence Of Words, Arithmetic Reasoning, Data Sufficiency.
3. General English- Antonyms, Synonyms, Spelling Check, Change of Voice, Spotting Errors, Sentence Improvement, One Word Substitute, Selecting Words, Sentence Corrections, Idioms and Phrases, Communication Skills, Common Error Detection, Sentence Compilation, Ordering of Words, Ordering of Sentences, Verbal Analogies, Sentence Formation, Completing Statements, Change of Speech.
4. General Knowledge - Indian History, Indian Economy, Indian Culture, Environmental Science, Awards and Honors, Famous Places in India, World Organization, Sports, Books and Authors, Famous Personalities, Days and Years, Indian and World Geography, Indian Politics, General Sciences, and Current Affairs
5. Computer Fundamentals - Operating System, MS Office, Internet based operations and email, antivirus and other online tools used in day-to-day office work.

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PART B

Technical Assistant in Civil Engineering

1. Structural Engineering

Concept of particle and rigid body, Free body diagram, Conditions of equilibrium, Principle of virtual work, Momentum and Energy principles, Conservation of Energy, Simple Stress and Strain, Elastic constants, Shear force and bending moment diagram, Theory of simple bending, Shear Stress distribution, Deflection of beams, Torsion of Shafts, Principal Stresses and Strains in two dimensions, Mohr's Circle, Theories of Elastic Failure, Castigliano's theorems I and II, Unit load method, method of consistent deformation applied to beams and pin jointed trusses. Slope deflection, Moment distribution, Rolling loads and Influences lines: Influences lines for Shear, Force and Bending moment at a section of a beam, Three hinged, two hinged and fixed arches, Matrix methods of analysis, Riveted, bolted and welded joints and connections, Design of tension and compression members, Beams of built-up section, Riveted and welded plate girders, gantry girders, Design of highway and railway steel bridges: Through and deck type, Concept of concrete mix design, Reinforced Concrete structures design using Working Stress and Limit State method, one way and two-way slabs, stair-case slabs, simple and continuous beams of rectangular, T and L sections, Isolated and combined footings, Cantilever and Counterfort type retaining walls. Design requirements for Rectangular and circular tanks resting on ground, Methods and systems of pre-stressing, anchorages.

2. Geotechnical Engineering

Types of soil, Phase relationships, Consistency limits, Particles size distribution, Classifications of soil, Structure and clay mineralogy, Capillary water and structural water, effective stress and pore water pressure, Darcy's Law, Factors affecting permeability, Determination of permeability, Permeability of stratified soil deposits, Seepage pressure, Quick sand condition, Compressibility and consolidation, Consolidation tests, Compaction of soil, Field control of compaction, Total stress and effective stress parameters, Pore pressure coefficients. Shear strength of soils, Mohr Coulomb failure theory, Shear tests, Earth pressure at rest,



active and passive pressures, Rankine's theory, Coulomb's wedge theory, Earth pressure on retaining wall, Bearing capacity, Terzaghi and other important theories, net and gross bearing pressure, Immediate and consolidation settlement. Stability of slopes, Essential features of foundation, Types of foundation, design criteria, Choice of type of foundation, Stress distribution in soils, Boussinessq's theory, Pressure bulb, Contact pressure, Evaluation of bearing capacity from field tests, Allowable bearing capacity, Settlement analysis, allowable settlement, Isolated and combined footings, Rafts, Buoyancy rafts, Pile foundation, Types of piles, Pile capacity, Static and dynamic analysis, Design of pile groups, Pile load test, Settlement of piles, lateral capacity, Foundation for Bridges, Ground improvement techniques–preloading, sand drains, stone column, grouting, soil stabilisation.

3. **Transportation Engineering and Surveying**

Highways: Planning & construction methodology, Alignments and geometric design, Traffic Surveys and Controls, Traffic flow theories, Principles of Flexible and Rigid pavements design, Highway construction materials and construction methods. Railways Systems: Terminology, Planning, geometric designs, Track components, Ballast, Sleepers, Rails, Formation, Station and yards, Signalling and interlocking, Maintenance practices; Track modernization.

Surveying: Classification of surveys, various methodologies, instruments & analysis of measurement of distances, elevation, and directions; Field astronomy, Global Positioning System; Map preparation; Photogrammetry; Remote sensing concepts; Survey Layout for culverts, canals, bridges, road/railway alignment, and buildings, Setting out of Curves.

4. **Environmental Engineering**

Sources, Estimation, quality standards and testing of water and their treatment; Rural, Institutional and industrial water supply; Physical, chemical and biological characteristics and sources of water, Pollutants in water and its effects, Estimation of water demand; Drinking water Standards, Water Treatment Plants, Water distribution networks, Planning & design of domestic wastewater, sewage collection, and disposal; Plumbing Systems. Components and layout of sewerage system; Planning & design of



Domestic Waste-water disposal system; Sludge management including treatment, disposal, and re-use of treated effluents; Industrial waste waters and Effluent Treatment Plants including institutional and industrial sewage management, Concepts & general methodology for air and noise pollution, Sources & classification of solid wastes along with planning & design of its management system; Disposal system, Beneficial aspects of wastes, and Utilization by Civil Engineers.

5. **Water-resources and Hydraulics Engineering**

Fluid properties and their role in fluid motion, Fluid statics including forces acting on plane and curve surfaces, Velocity and accelerations, Stream lines, Equation of continuity, Irrotational and rotational flow, Velocity potential and stream functions, Control volume equation, Continuity, Momentum, energy and moment of momentum equations from control volume equation, Navier-Stokes equation, Euler's equation of motion, application to fluid flow problems, pipe flow, plane, curved, stationary and moving vanes, sluice gates, weirs, orifice meters and Venturi meters. Dimensional Analysis and Similitude, Laminar and turbulent boundary layer on a flat plate, Drag and lift, Turbulent flow through pipes, Precipitation, Runoff, Infiltration, Hydrographs, Irrigation Methods, Duty and Delta, Design of canal, Uniform and non-uniform in Open channel, Momentum and energy correction factors, Specific energy and specific force, Critical depth, resistance equations and variation of roughness coefficient, rapidly varied flow, flow in contractions, Flow at sudden drop, Hydraulic jump and its applications, Surges and waves, Gradually varied flow, Classification of surface profiles, Control section, Step method of integration of varied flow equation, moving surges and hydraulic bore, Design of Gravity Dam, Earthen Dam, Arch Dam, Weir and Barrage, Spillways, Flood, Drought, and their management, Capacity of Reservoirs.

Dr. Ananya



Technical Assistant in Electrical Engineering

1. Basic Concepts: Concepts of resistance, inductance, capacitance, and various factors affecting them. Concepts of current, voltage, power, energy and their units various circuit laws and theorems and solution of simple electrical circuits.
2. Magnetic Circuit: Concepts of flux, mmf, reluctance, Different kinds of magnetic materials, Magnetic calculations for conductors of different configuration e.g. straight, circular, solenoidal, etc. Electromagnetic induction, self and mutual induction.
3. AC Fundamentals: Instantaneous, peak, R.M.S. and average values of alternating waves, Representation of sinusoidal wave form, simple series and parallel AC Circuits consisting of R, L, and C, Resonance. Poly Phase system – star and delta connection, 3 phase power, DC and sinusoidal response of R-L and R-C circuit.
4. Electrical Machines: (a) D.C. Machine – Construction, Basic Principles of D.C. motors and generators, their characteristics, speed control and starting of D.C. Motors. Method of braking motor, Losses and efficiency of D.C. Machines. (b) 1 phase and 3 phase transformers – Construction, Principles of operation, equivalent circuit, voltage regulation, O.C. and S.C. Tests, Losses and efficiency. Parallel operation of 1 phase / 3 phase transformers. Auto transformers. (c) 3 phase induction motors, rotating magnetic field, principle of operation, equivalent circuit, torque-speed characteristics, starting and speed control of 3 phase induction motors. (d) Synchronous Machines - Generation of 3-phase e.m.f. armature reaction, voltage regulation, parallel operation of two alternators, synchronizing, control of active and reactive power. Starting and applications of synchronous motors.
5. Power Systems: Different types of power stations, Load factor, diversity factor, demand factor, cost of generation, inter-connection of power stations. Power factor improvement, various types of tariffs, types of faults, short circuit current for symmetrical faults. Switchgears – rating of circuit breakers, Principles of arc extinction by oil and air, H.R.C. Fuses, Protection against

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- earth leakage / over current, etc. Buchholtz relay, Merz-Price system of protection of generators & transformers, protection of feeders and bus bars. Lightning arresters, various transmission and distribution system, comparison of conductor materials, efficiency of different system. Cable – Different type of cables, cable rating and derating factor, faults detection in cables. Various types of insulators for overhead lines and switchgear. Different types of Relays for Line, Generator and transformer protection, different types of switchgears for power system, Line faults, transformer faults.
6. Power Electronics: Static V-I characteristics and firing/gating circuits for Thyristor, MOSFET, IGBT; DC to DC conversion: Buck, Boost and Buck-Boost Converters; Single phase and three phase ac to dc converters, dc to ac converters.
7. Control Systems: Classification of signals and systems; Application of signal and system theory; System realization; Transforms & their applications; Signal flow graphs, Routh-Hurwitz criteria, root loci, Nyquist/Bode plots; Feedback systems-open & close loop types, stability analysis, steady state, transient and frequency response analysis; Design of control systems, compensators, elements of lead/lag compensation, PID and industrial controllers.

Dr. Anand B.



Technical Assistant in Electronics and Communication Engineering

1. **Electronic Devices and Circuits:** PN junction diodes and their applications. Zener Diode, BJT, JFET, MOSFET, amplifiers, oscillators, Op-amp. Logic gates, combinational and sequential circuits.
2. **Networks, Signals and Systems:** Basics of RL, RC, and RLC circuits, network theorems, filters, different signals and systems, LTI systems, convolution and correlation, Fourier analysis, Laplace transform and Z-transform.
3. **Communication Systems:** Amplitude and angle modulation techniques, sampling and quantization, pulse modulation techniques, digital modulation techniques (ASK, FSK, PSK), Delta Modulation, Line Coding, bit error rate and eye pattern.
4. **RF and Microwave Engineering:** Microwave Testbench, Waveguides, reflex klystron, GUNN diode, VSWR measurement, and impedance matching. Isolator, circulator, directional coupler, and E/H plane/magic tees.
5. **Wireless and Optical Communication:** Antenna parameters, dipoles antenna, array, radiation patterns and gain. VNA measurement and Calibration. Optical fiber, optical source and detector.
6. **Lab Equipments and Software:** Digital Multimeter, Cathode Ray Oscilloscope, Digital storage oscilloscope, frequency and phase measurement. Signal generators, DC power Supply, spectrum analyzers, PCB design and fabrication. Software: MATLAB, Simulink and Multisim.

dr. ananya



Technical Assistant in Computer Science & Engineering

1. **Programming Languages and Development Tools:** Proficiency in C, C++, Java, Python, R and MATLAB; fundamentals of programming, data types, operators, control structures, functions, arrays, strings, pointers, classes and objects, inheritance, polymorphism, exception handling and file handling, as applicable to the respective languages. Compilation, execution, debugging and use of commonly used programming environments/IDEs.
2. **Data Structures, Design and Analysis of Algorithms**
3. **Operating Systems, Computers and Servers:** Installation, configuration, maintenance and troubleshooting of Windows and Linux operating systems, including client and server versions; disk and file-system management, device drivers, user and group management, software installation, system updates, backup and recovery. Installation, configuration and troubleshooting of computer/server-related equipment, storage and peripheral devices; basic configuration and administration of server systems and associated services.
4. **Web and Application Development:** Proficiency in PHP and JSP for application development; .NET Framework including C#, ASP.NET, RDLC and Crystal Reports. Web development using front-end and back-end technologies; HTML, CSS, JavaScript, server-side programming, web forms, database connectivity, deployment and troubleshooting of web applications. Basic knowledge of web/application servers and hosting environments.
5. **Database, MIS and Website Management:** Database creation, configuration and management using Oracle, Microsoft SQL Server and MySQL; SQL queries, tables, keys, constraints, joins, views, procedures, backup/recovery and database connectivity with applications. Working knowledge of Management Information Systems (MIS), generation and management of reports, data maintenance, user access and routine MIS support. Website administration, content updating, deployment, maintenance, backup and troubleshooting.
6. **Laboratory and Video-Conferencing Management:** Proper management of computer laboratories including installation and maintenance of systems and software, preparation of laboratory systems, user support, equipment monitoring, inventory and maintenance records. Installation, configuration, operation and troubleshooting of video-conferencing (VC) systems including cameras, microphones, speakers, displays/projectors and associated audio/video devices; support and management of online meetings, presentations and classroom/conference-room VC facilities.

Monaye



Technical Assistant in Computing

- 1. Programming Languages and Development Tools:** Proficiency in C, C++, Java, Python, R and MATLAB; fundamentals of programming, data types, operators, control structures, functions, arrays, strings, pointers, classes and objects, inheritance, polymorphism, exception handling and file handling, as applicable to the respective languages. Compilation, execution, debugging and use of commonly used programming environments/IDEs.
- 2. Data Structures, Design and Analysis of Algorithms**
- 3. Operating Systems, Computers and Servers:** Installation, configuration, maintenance and troubleshooting of Windows and Linux operating systems, including client and server versions; disk and file-system management, device drivers, user and group management, software installation, system updates, backup and recovery. Installation, configuration and troubleshooting of computer/server-related equipment, storage and peripheral devices; basic configuration and administration of server systems and associated services.
- 4. Web and Application Development:** Proficiency in PHP and JSP for application development; .NET Framework including C#, ASP.NET, RDLC and Crystal Reports. Web development using front-end and back-end technologies; HTML, CSS, JavaScript, server-side programming, web forms, database connectivity, deployment and troubleshooting of web applications. Basic knowledge of web/application servers and hosting environments.
- 5. Database, MIS and Website Management:** Database creation, configuration and management using Oracle, Microsoft SQL Server and MySQL; SQL queries, tables, keys, constraints, joins, views, procedures, backup/recovery and database connectivity with applications. Working knowledge of Management Information Systems (MIS), generation and management of reports, data maintenance, user access and routine MIS support. Website administration, content updating, deployment, maintenance, backup and troubleshooting.
- 6. Laboratory and Video-Conferencing Management:** Proper management of computer laboratories including installation and maintenance of systems and software, preparation of laboratory systems, user support, equipment monitoring, inventory and maintenance records. Installation, configuration, operation and troubleshooting of video-conferencing (VC) systems including cameras, microphones, speakers, displays/projectors and associated audio/video devices; support and management of online meetings, presentations and classroom/conference-room VC facilities.

Kranaya



Technical Assistant in Software

- 1. Proficiency in the web/Application development (Backend + Frontend):** HTML5 & CSS3 (semantic elements, document object model structure, modern layouts, flexbox, grid); Responsive design (media queries, mobile-first design, frameworks, tailwind CSS, bootstrap); JavaScript (variables, execution context, data types, control flows, map, filter, reduce, promises, async/await); DOM (selecting elements, event handling, dynamic UI updates); Version control in code repositories with Git and GitHub; ReactJS (components, JSX, props, declarative state management); Hooks (useState, useEffect, useContext, custom hooks); Routing (client-side navigation via react router); Data fetch, Axios; JavaScript, NextJS components, NodeJS (event loop, file systems, npm package management, asynchronous execution); ExpressJS (create servers, custom routing, HTTP status codes and methods, GET, POST, PUT, DELETE); TypeScript, RESTful APIs (endpoints, status codes, JSON payload parse, API requests, responses), APIs testing by Postman or similar tools, Docker/Docker Compose; Middleware (CORS configurations, request loggers, Morgan, centralized error-handling); websites/web servers and web applications, API server, Nginx, reverse proxy, web server configuration, modify and maintain existing application code, server/application maintenance under supervision.
- 2. Proficiency in Python / R / JAVA / MATLAB / C / C++.**
- 3. Proficiency in Python/ JAVA / C / C++/.net framework (C#, ASP.net, RDLC and Crystal reports)/PHP/JSP for application development.**
- 4. Proficiency in DBMS Management (Oracle,SQL server, MySQL):** Open-source database (relation, tables, primary keys, foreign keys, normalization, database records); PostgreSQL, MySQL; SQL (structural queries, SELECT, INSERT, UPDATE, DELETE, schema creation, data constraints, JOIN tables); Database driver; Object-relational mapping (Prisma, sequelize); Full-Stack Integration, Security, Authentication & Authorization (user registration, secure password hashing, bcrypt, JSON web tokens, sessions); Validation (validation schemas, SQL injections, zod, joi); Environment variables (database URI strings, API keys, .env files).
- 5. Working knowledge of MIS and website Management:** Cloud database (provisioning fully managed DB instances, neon, elephantSQL); backend hosting (deploying backend services & APIs to PaaS, render, heroku); Frontend hosting (react UI on edge networks, vercel, netlify), Troubleshooting frontend/ API/ backend/ database/ deployment, monitoring applications, Debugging errors from logs, Git and software version control.

Registrar