



राष्ट्रीय प्रौद्योगिकी संस्थान मणिपुर
NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR

Imphal, Manipur, Ph.(0385) 2058566 / 2445812

E-mail : director@nitmanipur.ac.in , Website : www.nitmanipur.ac.in

An Autonomous Institute under Ministry of Education, Govt. of India.

a) **Technical Assistant (CE,CSE,EE,ME,ECE, Phy, & Chem):**

I. Mode Selection: The mode of selection will be as follows:

Paper I: Competitive Examination - CE,CSE,EE,ME,ECE,Phy, & Chem:

- Candidates fulfilling the minimum eligibility criteria will be considered provisionally eligible to appear for the competitive written examination (**paper I**) for 100 marks. This will be an objective type examination. Candidates who scores above the minimum qualifying marks will only be called for Paper II: Trade/Skill Test.
- Questions for the Paper I will be designed to test the candidate's knowledge in his/her concerned subject.
- Candidates, who qualify in Paper II, will be recommended for appointment, in order of merit, only on the basis of the performance of the candidates in Paper –I competitive examination.
- Success in the examination confers no right of appointment.

Paper I (Part-B as notified earlier in the website)	Maximum Marks	Minimum qualifying Marks	Duration	Compensatory Time *
Competitive written Examination	100	60	2 hours	40 minutes

*PwD candidates availing scribe/reader/lab assistant.

Paper II: trade test/Skill test. Trade Test/Skill test is only of qualifying nature.

Paper II (Part-A as notified in the web site)	Maximum Marks	Minimum qualifying Marks	Duration	Compensatory Time *
Skill Test/Trade test based on Part-B syllabus as notified earlier in the website).	50	25	45 minutes	20 minutes

*PwD candidates



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II SCHEME OF EXAMINATION: The examination consist of two papers, **Paper I:** Competitive written examination (objective type) for 100 marks and **Paper II:** Trade Test/Skill Test for 50 marks. Indicative syllabus for Paper I (Part-B) and Paper II (Part-A) for each subject areas (Civil, CSE, EE, ME, ECE, Physics, and Chemistry), as notified earlier in the website, are given below for ready reference:

S No	Technical Assistant	Syllabus
1	Technical Assistant (Civil)	<p style="text-align: center;">TECHNICAL ASSISTANT (CIVIL ENGINEERING)</p> <p>PART A (Trade Test/Skill Test)</p> <p>Syllabus for Trade or Skill test will be based on the PART B syllabus.</p> <p>PART B (Syllabus for Competitive written examination)</p> <p>Building Materials, Surveying, Soil Mechanics, Hydraulics, Environmental Engineering, Structural Engineering, Concrete Technology, RCC Design, Steel Design.</p>
2	Technical Assistant (Computer Science and Engineering)	<p style="text-align: center;">TECHNICAL ASSISTANT (COMPUTER SCIENCE AND ENGINEERING)</p> <p>Paper A Trade Test/Skill Test</p> <p>Hardware: Assembling of PC; Installation of Systems and troubleshooting, BIOS settings 3. Installation and testing of a printer, Printer Maintenance, Scanner Installation 4. Installation and Maintenance of UPS Systems 5. Installation of Firewalls and Connectivity of LAN & WAN 6. Installation of Wireless network devices.</p> <p>Software: Debugging C/ C++ Programs; Installation and Administration of SQL & Oracle, 3. Installation of various variants of Operating systems like Windows and Linux 4. Installation of Software like Visual Studio, UML, Cisco Packet tracer 5. Working of MS-Office components like Word, Excel & PowerPoint 6. Configuring and sharing internet in PCs and other devices 7. Object oriented Programming: Functions, Data type, Recursion, Arrays, Stacks, Queues, Binary Search Trees, Sorting</p> <p>PART-B (Syllabus for Competitive written examination)</p> <ol style="list-style-type: none"> 1. Programming and Data Structure - C Language, Object oriented Programming, functions, datatype, Recursion, Arrays, Stacks, Queues, Binary Search Trees, Sorting. 2. Operating system – System calls, processes, threads, Inter process communication, concurrency and synchronization: Deadlock, CPU and I/O scheduling, Memory management and virtual memory 3. Computer Networks- OSI and TCP/IP Protocol Stacks, Basics of packet, circuit and virtual circuit switching, framing, error detection, Medium Access Control, Ethernet bridging, Fragmentation and IP addressing, IPv4, CIDR notation. 4. Digital Logic- Boolean algebra, Combinational and sequential circuits, Minimization, Number representations and computer arithmetic. 5. Computer Organization and Architecture- Machine instructions and addressing modes, ALU, datapaths and control units, Instruction pipelining, pipeline hazards, Memory hierarchy- cache, main memory and secondary storage. 6. Algorithm- Searching, sorting, hashing, Asymptotic worst-case time and space complexity, Algorithm design techniques: greedy, dynamic programming and divide-and-conquer, Graph traversals, minimum spanning trees, shortest paths.



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3	Technical Assistant (Electrical Engineering)	<p style="text-align: center;">TECHNICAL ASSISTANT (ELECTRICAL ENGINEERING)</p> <p>PART A (Trade Test/ Skill Test) Trade or Skill test will be based on the syllabus provided in PART B. PART B (Syllabus for Competitive written examination) Basic Electrical Engineering, D.C. Machines, Batteries and Measuring Instruments, A.C. Circuits and Transformers, A.C. Machines, Power System Generation and Protection, Transmission and Distribution, Basic Electronics and Digital Electronics, Power Electronics and Micro Controller, Control System.</p>
4	Technical Assistant (Mechanical Engineering)-	<p style="text-align: center;">TECHNICAL ASSISTANT (MECHANICAL ENGINEERING)</p> <p>PART A (Trade Test/ Skill Test) Trade or Skill test will be based on the syllabus provided in PART B. PART B (Syllabus for Competitive written examination) Engineering Mechanics, Engineering Drawing, Manufacturing Technology, CNC, Mechanics of Solids, Thermodynamics and IC Engine, Kinematics and Dynamics of Machines, Fluid Mechanics and Turbomachinery, Heat Transfer, Thermodynamics and IC Engine, Refrigeration and Air Conditioning.</p>
5	Technical Assistant (ECE) –	<p style="text-align: center;">TECHNICAL ASSISTANT (ELECTRONICS AND COMMUNICATION ENGINEERING)</p> <p>PART A (Trade Test/ Skill Test) Trade or Skill test will be based on the syllabus provided in PART B. PART B (Syllabus for Competitive written examination) Basic Electronics, devices and circuits, Electrical circuits, Electronic Instruments and Measurements, Communication Engineering, Digital Electronics, Power Electronics, Microprocessor, Electronics Design and Simulation.</p>
6	Technical Assistant (Physics)	<p style="text-align: center;">TECHNICAL ASSISTANT (PHYSICS)</p> <p>PART A (Trade Test/ Skill Test) Trade or Skill test will be based on the syllabus provided in PART B. PART B (Syllabus for Competitive written examination) Properties of Matter, Mechanics, Electricity and Magnetism, Optics, Quantum Mechanics, Thermodynamics and Statistical Physics, Semiconductors, Solid State Physics, Nuclear and Particle Physics, Knowledge of measurements and errors.</p>



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7	Technical Assistant (Chemistry)	<p style="text-align: center;">TECHNICAL ASSISTANT (CHEMISTRY)</p> <p>PART A (Trade Test/ Skill Test)</p> <p>Trade or Skill test will be based on the syllabus provided in PART B.</p> <p>PART B (Syllabus for Competitive written examination)</p> <p>Atomic and Molecular Structure, Gaseous State, Liquid State, Solid State, Chemical Thermodynamics, Chemical and Phase Equilibria, Electrochemistry, Chemical Kinetics, Adsorption, Spectroscopy, Basic Concepts in Organic Chemistry and Stereochemistry, Organic Reaction Mechanism and Synthetic Applications, Organometallic reagents in organic synthesis, Qualitative Organic Analysis, Natural Products Chemistry, Aromatic and Heterocyclic Chemistry, Periodic Table, Extractions of Metals, Chemical Bonding and shapes of molecules, Main Group Elements (s and p blocks), Transition Metals (d block), Bioinorganic Chemistry, Instrumental Methods of Analysis, Analytical Chemistry.</p>
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