

NPCIL Scientific Assistant Exam Pattern

Category II- Stipendiary Trainee/Technician (ST/TM), Technician-B and Driver Grade-1

I) Preliminary Test

Sl. No	Name OF The Subjects	Questions Count	Maximum Marks	Time Duration
1	Mathematics	20 Questions	300 Marks	One Hour
2	Science	20 Questions	(Each question 3 Marks)	
3	General Awareness	10 Questions		

II) Advanced Test

Sl.No	Subjects Names	Number of Questions	Maximum Marks	Time Duration
1	Academic Based	50	150 Marks (Each question 3 Marks)	2 Hours

For Scientific Assistant-B & Category-I Stipendiary Trainee/Scientific Assistant (ST/SA)

Sl. No	Subjects Covered	Number Of Questions	Maximum Marks
1	English and Quantitative Aptitude	35	300 Marks (Each question 3 Marks)
2	Related Subjects	65	

NPCIL Stipendiary Trainee Syllabus - Topic Wise

English Syllabus

- Idioms & Phrases.
- Sentence Rearrangement.
- Fill in the Blanks.
- Shuffling of sentence parts.
- Synonyms.
- Antonyms.
- One word substitutions.
- Error Correction.
- Vocabulary.
- Grammar.
- Comprehension.
- Sentence structure.

- Verbal Comprehension.
- Unseen Passages.
- Subject-Verb Agreement etc.

Aptitude Syllabus

- Number Systems.
- Decimals and Fractions.
- Averages.
- Percentages.
- Interest.
- Ratio and Proportion.
- Use of Tables and Graphs.
- Mensuration.
- Profit and Loss.
- Discount.
- Problems on Ages.
- Pipes & Cisterns.
- Problems on Trains.
- Ratio and Time.
- The relationship between Numbers.
- Computation of Whole Numbers.
- Time and Distance.
- Mixtures & Proportions.
- Time and Work.
- Fundamental arithmetical operations etc.

Mathematics Syllabus

- Cartesian System of Rectangular Coordinates
- Straight Lines Family of Straight Lines
- Applications of Derivatives
- Matrices
- Quadratic Equations
- Determinants
- Logarithms
- Complex Numbers
- Definite Integrals
- Exponential and Logarithmic Series
- Permutations and Combinations
- Circles
- Differentiation
- Indefinite Integrals Binomial Theorem
- Conic Sections
- Trigonometry
- Relations and Functions

- Probability Function
- Sequences and Series

General Awareness Syllabus

- National Dance
- Tribes
- About India and its neighboring countries
- National and current international affairs
- Handicrafts
- National News (current)
- Sculptures
- Science and innovations
- Political Science
- New inventions
- Books And Author
- History of India
- Artists
- Geography of India
- Countries and capitals
- Famous Places
- Indian Culture
- Important Dates
- World organizations
- Music & Literature
- Musical Instruments
- Scientific observations
- International issues
- Famous Places in India
- Economic issues in India

Science Syllabus

- Electromagnetic Waves
- Organic Chemistry
- Mechanics of Solids and Fluids
- Kinematics, Current Events
- Computer Science
- Atomic Nucleus / Solid and Semi-Conductor Device
- Physical World and Measurement
- Work, Energy, and Power
- Physiology and Human Diseases
- Nutrition and Health
- Optics
- Food
- Principles of Communication

- Dual Nature of Matter and Radiations
- Electrostatics
- The Motion of System of Particles & Rigid Body
- Magnetic Effect of Current and Magnetism
- Electromagnetic Induction and Alternating Current
- Heat Thermodynamics
- Metals and Non-Metals
- Laws of Motion

Computer Science/ Information Technology Syllabus

- Engineering in Mathematics.
- Databases.
- Operating System.
- Computer Organization and Architecture.
- Digital Logic.
- Algorithms.
- Programming and Data Structures.
- Computer Networks.
- Theory of Computation.
- Compiler Design also.

Commerce Syllabus

- Micro Economics.
- Money, Banking & International Trade.
- Macro Economics.
- Public Finance.
- Indian Economy.
- Indian Economy.
- Development & Environment Economies.
- Industry.
- Employment.
- Public Finance & Fiscal Policy
- Trade etc.

Finance & Accounts Syllabus

- Indian Accounting Standards.
- Issues of Bonus Shares and Profits before Incorporation.
- Valuation of Goodwill and Shares.
- Issues of Shares and Debentures and their Redemption.
- Amalgamation and Internal Reconstruction.
- Final Accounts.

Computer Knowledge Syllabus

Windows Operating System

- Desktop Applications such as
 - MS Office (Word, Excel, Access, and PowerPoint)
 - E-mail Management
 - Internet Surfing

Electrical Engineer Syllabus

- Electrical Machines
- Power System Protection
- Power Systems
- Electronics Devices
- Analog and Digital Electronics
- Power System Analysis & Control
- Electrical Instrumentation
- Power Electronics & Drives
- Electromagnetic Theory
- Network Analysis
- Utilization of Electrical Energy
- Control Systems
- Switch Gear and Protection etc.

Mechanical Engineer Syllabus

- Heat-Transfer
- Refrigeration & Air Conditioning
- Hydraulic Machines
- Theory of Machines
- Industrial Engineering
- Fluid Mechanics
- Machine Design
- The strength of Materials
- Mechanics of Materials
- IC Engines
- Engineering Mechanics
- Production Engineering
- Vibrations
- Thermodynamics
- Production Management etc.

Electronics and Communication Engineer Syllabus

- Power Electronics & Drives.
- Basic Electronics/ Power Electronics.
- Analog Electronics.

- Advanced Communications.
- Analog Communications.
- Measurement & Instrumentation.
- Industrial Electronics.
- Circuit Theory/ Digital Electronics.
- Digital Communications.
- Microprocessors & Microcontrollers.
- Computer Hardware etc.

Chemical Engineer Syllabus

- Process Calculations and Thermodynamics
- Fluid Mechanics and Mechanical Operations
- Mass Transfer
- Chemical Reaction Engineering
- Heat Transfer
- Plant Design and Economics
- Instrumentation and Process Control
- Chemical Technology etc.

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