

52nd
NATIONAL
MATHEMATICS
TALENT CONTESTS

Organised by

AMTI

[Association of Mathematics Teachers of India – (Regd.)]

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For more details, please see our website (**Under NMTC head**)

Last date for Response

10 – 03 – 2021 (Wednesday)

The **AMTI** is a pioneer organization in promoting and conducting Mathematics Talent Tests in India. Last year (in the 51st National level tests) 1,12,273 students from 697 institutions spread all over India participated at the screening level. About **10%** of them were selected for the finals. Merit certificates and prizes were awarded to the deserving students selected in the final.

These exams have great impact on the students successfully clearing RMO at the regional level and INMO at the national level. In 2020-INMO, 2 students in the general category and 2 girl students were selected from Tamilnadu and Puducherry. Additionally, 4 students were placed in the merit list. We see some of our Primary and Sub-junior toppers of earlier years in the INMO merit list every year.

We now announce the 52nd Inter - State Competitions.

AIM OF THE TESTS

To discover and encourage students who have the capacity for original and creative thinking, *willingness* to *attempt* unfamiliar and non-routine problems, exhibiting a general mathematical ability appropriate to their level.

PARTICIPANTS:

Students from Schools, Junior Colleges of all boards, Degree Colleges and Technological Institutions in India.

Primary	Gauss Contest	V and VI Standards
Sub-Junior	Kaprekar Contest	VII and VIII Standards
Junior	Bhaskara Contest	IX and X Standards
Inter	Ramanujan Contest	XI and XII Standards
Senior	Aryabhata Contest	Degree Classes in Arts, Science & Technical Institutions

MEDIUM : Unlike previous years, (just for this year only) , the medium will be only **ENGLISH** (for all levels).

FEES : Rs. 150/- per candidate to be directly sent to the AMTI by the student. (Each institution will receive from AMTI Rs.25/- per candidate appearing for Stage-1; this is for their incidental expenses and also to conduct the Stage-2 Final test).

SYLLABUS

The syllabus for Math Olympiad (Regional, National and International):

This is usually pre-degree college mathematics, covering, mainly –
a) Algebra, b) Geometry, c) Number theory and d) Graph theory & Combinatorics

Algebra: Polynomials, Solving equations, inequalities and complex numbers.

Geometry: Geometry of triangles and circles. (Trigonometric methods, vector methods, complex number methods, transformation geometry methods can also be used to solve problems)

Number Theory: Divisibility, Diophantine equations, congruence relations, prime numbers, and elementary results on prime numbers.

Combinatorics & Graph Theory: Counting techniques, pigeon-hole principle, principle of inclusion and exclusion, basic graph theory.

*Problems pertaining to these concepts will be of non-routine type with difficulty level increasing from **RMO** to **INMO** to **IMO**.*

Types of problems in NMTC tests:

Our focus is to provide an exposure to problems which require out of box thinking, from class V onwards and to motivate students to take up challenging mathematical problems. Thus, questions set at these levels are usually solvable by the students of respective standards, if they have a clear knowledge of fundamental concepts introduced to them.

A glance at the Questions & Solutions of previous years from the books published by the AMTI will facilitate students at all levels to understand the nature of Olympiad examinations. Please see details in our website amtionline.com

Every candidate **except the senior level** takes **three tests**- a **Mock Test**, **Preliminary (Stage-1) Test** and **Final (Stage-2) Test**. See details below.

Change in Procedure for Registration:

Due to the uncertainty created by the pandemic, regarding the reopening of schools, we at AMTI have decided to move the online way for the Stage-1 examination.

There is a big change in procedure for registration of participants.

The schools will now inform their students, who are interested in taking the tests to apply on line in AMTI website: amtionline.com. The registration is thus individualized. The system will generate the school ID and it will be sent to the corresponding school for their reference. The candidate will also **need to provide a clear photo snap along with their name, school id and active mobile and e-mail contacts**.

Payment to be made by the student is also online. Once the payment goes through, the system will send a 13 digit registration number to their active personal mobile and email id, which they would have provided us with.

The user ID and password will be generated by the office and communicated to the student. The stage-1 test will be conducted by AMTI directly. The results will be declared within a week and the list of top 10% students in each school will be intimated to the school **as well as** the students. These 10% students will get their certificates and will be eligible to write Stage-2 (FINAL) test. The certificates of these students may be downloaded from AMTI website. These certificates will form the Hall tickets for the Final (Stage-2) test.

Stage-2 (Final) test will be a paper and pen examination as last year. The eligible students will take the Stage-2 test in their own institutions or schools.

How the student shall take the Mock Test and Stage-1 Test:

The **Mock test** and **Stage-1 test** will be of 90 minutes duration. There will be a window of 4 hours within which the student can log in. As soon

as the student **logs** in, the time starts. **At the end of 90 minutes it will automatically close**, submitting the answers provided by the student up to that point. (The 4-hour window-time is to take care of local electricity supply or network problems. *It will be the responsibility of the students and parents to make appropriate arrangements, taking into account any disruption in power supply or the network crisis in the middle of the test. (Make sure that you use back up for 90 minutes to ensure uninterrupted supply like JIO Hotspot or other service providers).*

The student once logged in, must continue for 90-minutes, and then submit. Every student will not get the same set of questions. The questions will be chosen by the computer from a large set of questions (of almost same difficulty level) at random.

Whole process at the student's end will be monitored by us. It is important to remember that any substitution of candidate will immediately be communicated to us, as the students have to keep their cameras on all through.

The answers in the format provided by the student will be automatically sent to AMTI for computer evaluation using the key provided. ***Adequate care is taken to see that each student's question set gets the associated answer key for evaluation.***

How shall the student write the Stage-2 (FINAL) test:

Stage-2 (Final) test will be a paper and pen examination as last year. The eligible students will take the Stage-2 test in their own institutions or schools. The Stage-1 certificate will be the Hall-ticket for the Final (stage-2) test.

It will be conducted only in the school the candidate is studying. The solutions of problems shall be written by the candidates only in the answer sheets (**strictly A4 size**) supplied by their school.

Open Quota:

There is no open quota this year (only for this year). Student must register through the institution.

Newly participating Schools for the first time:

All the above instructions apply to newly participating schools. Candidates from these schools must enter the name of the school, in the field provided as "if other, please specify". System will generate a school id for the new school also.

Awards and Certificates:

Cash Awards to the top **3 winners** in each level in the finals, (**1st position Rs.5000/-, 2nd Rs.3000/- and 3rd Rs. 2000/-**), Merit Certificates for them and others selected at the final level with a token cash award for the latter, will be given based on their revealing a fair level of mathematical maturity. Enrichment contact courses are likely to be organized for the promising toppers.

TIME SCHEDULE

Last Date for entries	10-03-2021 * (Wednesday)	* Late entries shall not be entertained.	
Mock test	15-03-2021 (Monday)	Test Duration: 90 minutes	Window time: (3 pm to 7 pm)
Stage-1 Preliminary Test	20-03-2021 (Saturday)	Test Duration: 90 minutes	Window time: (3 pm to 7 pm)
Declaration of results of Stage-1 test	On or before 31-03-2021		
Stage-2 Final Test	03-04-2021 (Saturday)	Test duration: (1 to 4 pm)	(This date is tentative)
Dispatch of Answer Books from the Centres to AMTI	Same day (only by Speed post)	(Speed post may be closed. Make the test timing earlier)	
Announcement of Results	By the end of 15 th May 2021		

In all matters the decision of AMTI is final.

Specific instructions to be remembered after Stage-1:

For final examination, candidates should write their exam in the school they are studying only. If for any reason they are unable to do so they will forfeit the chance. No further claim will be entertained.

Results are declared after taking enough care, checking and cross checking only. No claim for communication of individual scores etc., will be entertained.

Communications are sent by email or WhatsApp.

This being a talent contest at all India level for final, marks alone may not suffice. We may decide merit holders by interviews also, if found necessary.

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POINTS TO REMEMBER: NMTC 2020-21 Online Stage – 1

- Read the details of 2020-21 NMTC *Online Stage-1* thoroughly.
- Fill in the e-Application Form with *relevant* details properly.
Make the *necessary payment by online* to complete your registration.
This completes enrollment in NMTC 2020-21.
- You will get *acknowledgement message* in your mobile and email provided by you.
- You will subsequently receive user name and password for *participating in the test*.
- *Keep checking our website for updates* on technical instructions and further information on NMTC 2020-21.