MITS
MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)
Estd 1998

NBA NATIONAL BOARD OF ACCREDITATION
CIVIL,CSE,ECE,EEE,MECH, MBA & MCA

Accredited by NAAC A+ Grade

nirf NATIONAL INSTITUTIONAL RANKING FRAMEWORK
MITS ranked in the band 251-300-NIRF 2022

# A Report on MITS-Math Fest-23 and National Mathematics Day Celebrations Organised by Department of Mathematics

## Date:18.12.2023 - 24.12.2023

Mathematics expresses itself everywhere in almost every facet of life- in nature all around us and in the technology in our hands. Mathematics develops computational skills, critical thinking and problem-solving skills. MITS recognizes this and strives to ensure that the student learner obtains this knowledge.

In India, the National Mathematics Day is observed on December 22 every year. It is celebrated in order to honour the birth anniversary of the famous Mathematician Sir Srinivasa Ramanujan. He was the world famous Mathematician who made remarkable contributions in various fields of Mathematics. As per the guidelines of AICTE, to create awareness and to celebrate this day in the college, the following activities were conducted during Mathematics Week from 18/12/2023 to 24/12/2023.

| S.No | Date | Name of the Event |
|---|---|---|
| 1 | 18/12/23 | Maths Quiz |
| 2 | 19/12/23 | Documentary on Ramanujan's Life |
| 3 | 20/12/23 | Student Paper Presentation |
| 4 | 21/12/23 | Essay Writing on " Contributions of India in the field of Mathematics" |
| 5 | 22/12/23 | Celebration of Mathematics Day , Skit |
| 6 | 23/12/23 | Expert Lecture on " Role of Mathematics in Science and Technology" |

### Day-1 : Maths Quiz

On the occasion of National Mathematics Day, Quiz programme was organized to celebrate the life and mathematical contributions of the legendary Srinivasa Ramanujan. The event aimed to engage participants in a comprehensive test covering Ramanujan's life journey and basic mathematical concepts. The celebration sought to foster a deeper understanding of mathematics while paying homage to one of the greatest mathematical minds in history.

**Quiz Details**:

***Date*** **- 18/12/2023**
***Time*** **- 4:00 pm to 5:00 pm**
***Venue*** **- Circular block**
***Mode of quiz*** **- Online**

**Topics covered in the Quiz**:

*Part A*: Life and Times of Srinivasa Ramanujan:

- Participants engaged in a test that delved into the key milestones and challenges in Ramanujan's life.
- Questions covered Ramanujan's early years, his self-taught mathematical journey, and the obstacles he overcame.

*Part B*: Basic Mathematics Challenge:

- A section of the test focused on fundamental mathematical concepts to assess participants' understanding of basic arithmetic, algebra, and geometry.
- Emphasis was placed on problem-solving skills and logical reasoning.

**Number of participants**: A total of 210 students were registered in this program and 165 students participated and their detailed marks report is enclosed.

**Prize Distribution and Recognition**:
Top 3 performers received the prizes.

| S. No. | NAME | Roll No. | Section | Winner |
|---|---|---|---|---|
| 1 | Sravan Kumar M. | 23691A04Q4 | ECE-D | 1st Prize |
| 2 | Thrisha G. | 23691A28H7 | CST-C | 2nd Prize |
| 3 | Amrutha Varshini A. | 23691A3111 | CAI-A | 3rd Prize |

Top 50 performers are invited for the Mathematics Day Celebrations on 22/12/2023.

**Conclusion**:

This quiz event is successfully combined a celebration of National Mathematics Day with a tribute to Srinivasa Ramanujan. The event not only tested participants' knowledge but also inspired a deeper appreciation for mathematics and the remarkable life of Ramanujan. As we reflect on this celebration, let us carry forward the spirit of curiosity and exploration that mathematics encourages, honouring Ramanujan's legacy on National Mathematics Day.

**Event In-charges:**

Dr. Ramesh P. (Asst. Professor)
Dr. P. Bharath Kumar (Asst. Professor)

## Day-2 : Documentary on Srinivasa Ramanujan's Life

On the occasion of National Mathematics Day, **Documentary** was organized to celebrate the life and mathematical contributions of the legendary Srinivasa Ramanujan. The event aimed to explores Ramanujan's struggles, achievements, and contributions to the field of mathematics. It also shows his quest to solve one of the most challenging mathematical problems of the era.

**Event Details:**

***Date - 19/12/2023***
***Time - 3:00 pm to 5:00 pm***
***Venue – Seminar Hall C***
***Mode of Event - Offline***

**Number of participants**: A total of 14 Teams participated in the event and their detailed score has been attached.

**Prize Distribution and Recognition:**

Top 3 performers received the prizes.

| S. No. | NAME | Roll No. | Section | Winner |
|---|---|---|---|---|
| 1 | V.Subramanyam | 23691A32F4 | CSD-C | 1st Prize |
| 2 | A.Sai Madhumitha | 23691A0512 | CSE-C | 2nd Prize |
| 3 | B.Manasa | 23691A0599 | CSE-B | 3rd Prize |

Performers are invited for the Mathematics Day Celebrations on 22/12/2023.

**Conclusion:**

This event is successfully combined a celebration of National Mathematics Day with a tribute to Srinivasa Ramanujan. The Documentary of Srinivasa Ramanujan, offered a number of valuable takeaways to students, like The importance of Hard work and determination, The Power of passion and curiosity and The importance of cultural exchange.

**Event In-charges:**

Dr. G. Leena Rosalind Mary (Asst. Professor)
Dr. K. Sreelakshmi (Asst. Professor)

## Day-3 : Student Paper Presentation

As part of the National Mathematics Day celebrations, a **Paper Presentation** was organized in honor of the legendary Srinivasa Ramanujan. The participants discussed various topics such as the role of mathematics in our daily lives, the applications of mathematics in science and technology, and the importance of mathematics in education. The paper presentations provided a platform for the exchange of ideas and information.

**Event Details:**

***Date - 20/12/2023***
***Time - 3:00 pm to 5:00 pm***
***Venue - Seminar Hall C***

*Mode of Event - Offline*

**Number of participants**: A total of 20 teams have registered. After 1st screening process 10 teams participated in the final presentation event.

**Prize Distribution and Recognition:**

Top 3 performers received the prizes.

| S. No. | NAME | Roll No. | Section | Winner |
|---|---|---|---|---|
| 1 | Nikitha A | 23691A05C4 | CSE-B | 1st Prize |
| 2 | Tabrez Basha.S | 23691A28G7 | CST-C | 2nd Prize |
| 3 | Saniya.S | 23691A04M6 | ECE-D | 3rd Prize |

Performers are invited for the Mathematics Day Celebrations on 22/12/2023.

**Conclusion:**

A celebration of National Mathematics Day and a tribute to Srinivasa Ramanujan were successfully integrated into this event. It was a great opportunity for the students to understand the importance of mathematics in their lives. It was followed by a lively discussion on the various applications of mathematics in the modern world. It also provided them with an opportunity to apply their knowledge and showcase their skills. Finally, it showed how mathematics can be used to create innovative products and solutions. The event concluded with a question and answer on mathematics and its applications. The participants had a great time and the event was an overall success.

**Event In-charges:**

Dr. R. Saravana (Associate Professor

Dr. Divya A (Asst. Professor)

## Day-4: Essay-writing

On the commemoration of National Mathematics Day, an essay writing event was conducted to explore and acknowledge the profound contributions of India in the realm of mathematics. This report aims to encapsulate the essence of the insightful essays presented during this event.

**Event Overview:**

"On National Mathematics Day", an insightful essay-writing event was held, focusing on the 'Contributions of India in the Field of Mathematics.' The participants delved into various facets of India's rich mathematical heritage. The essays highlighted India's historical contributions, including the invention of zero, the decimal system, and algebraic principles by ancient mathematicians such as Aryabhata. Emphasis was placed on the innovations of the medieval Kerala School and Srinivasa Ramanujan's profound impact during the colonial era.

Post-independence achievements, notably the establishment of institutions like the Tata Institute of Fundamental Research (TIFR) and the Indian Statistical Institute (ISI), were celebrated in the essays. Modern mathematicians such as C.R. Rao and Harish-Chandra were acknowledged for their roles in elevating India's global mathematical standing. Common themes in the essays included India's on-going commitment to mathematical research, international collaborations, and the emerging influence of Indian mathematicians on the global stage. The event served as a concise yet comprehensive exploration of India's enduring legacy in the field of mathematics

**Essay Writing Details**:

*Date - 21/12/2023*
*Time - 4:00 pm to 5:00 pm*
*Venue – Seminar Hall C*

**Number of participants**: A total of 30 students participated in the event and their detailed marks report has been attached.

**Prize Distribution and Recognition**:

Top 3 performers received the prizes.

| S. No. | NAME | Roll No. | Section | Winner |
|---|---|---|---|---|
| 1 | K.Sai Prasuna | 23691A05I5 | CSE-C | 1st Prize |
| 2 | P.Jahnavi Yadav | 23691A0572 | CSE-B | 2nd Prize |
| 3 | S.Reddy Neeraja | 23691A0238 | EEE-A | 3rd Prize |

All the performers are invited to the Mathematics Day Celebrations on 22/12/2023.

**Conclusion**:

The essay writing event successfully provided a comprehensive exploration of the Contributions of India in the Field of Mathematics. The diversity of perspectives, historical insights, and contemporary analyses presented by participants underscored the depth of India's impact on the global

mathematical landscape. As we celebrate National Mathematics Day, it is evident that India's mathematical journey is not only a testament to its glorious past but also a promising trajectory for the future.

**Event In-charges**

Dr. T. Chalapathi (Asst. Professor)

Dr. G. Durga Bhavani (Asst. Professor)

**Day-5: Mathematics Day**

As a part of MITS Math Fest -2023, Madanapalle Institute of Technology & Science, Madanapalle celebrated **"National Mathematics Day" on December 22, 2023** in remembrance of 136th Birth Anniversary of the Eminent Indian Mathematician Srinivasa Ramanujan Iyengar. He was a renowned Indian mathematician whose contributions gave entirely newer dimension to mathematics. The main objective behind celebrating the day is to raise awareness among students about the importance of mathematics for the development of humanity.

The programme started at 4:00 PM with garlanding the portrait of Srinivasa Ramanujan. Dr. P. Ramesh Reddy, Head of Department of Mathematics presided over the program. Dr.C.Yuvaraj, Principal, Prof.R.Tulsiram Naidu, Advisor, Research and Consultancy graced the dais. The introductory speech of the program was delivered by the organizing committee member Dr.Padmaja, Assistant Professor. In her introductory speech, she explained the purpose and outline of the program.

Dr. P. Ramesh Reddy, Head of Department of Mathematics highlighted the contributions of Srinivasa Ramanujan in Mathematics and his commitment and interest on mathematics. Dr.C.Yuvaraj, Principal mentioned the significance and relevance of National Mathematics day and emphasized the importance of mathematics for engineers. Dr. R. Tulseeram Naidu congratulated all the students and wished them a happy National Mathematics Day. He wished all the students to get in-depth knowledge of mathematics and work hard to get their name in the university merit list.

On this occasion, Principal, HOD and other dignitaries presented prizes to the winners in various events. Later, a video presentation was arranged for the students about Srinivasa Ramanujan's biography, achievements, magic square and applications of mathematics.




**Day-6: Expert Lecture**

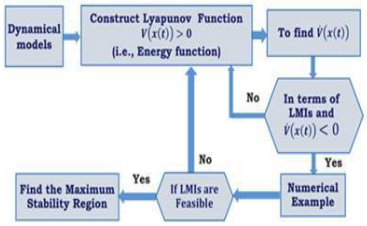
**Expert Lecture Details**:

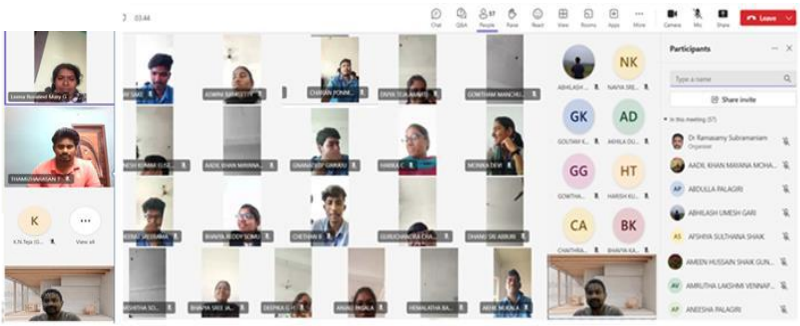
***Date - 23/12/2023***
***Time - 4:00 pm to 5:00 pm***
***Venue – Online Mode***

The session started from the basic needs and how to correlate Mathematics with engineering applications. The nonlinear model with fuzzy-based SD control has been investigated. Also, the fuzzy-membership rules are dependent to fuzzy premise variables (nonlinear terms) and if there no possibilities of nonlinear terms, then the rules are assumed to be one and the corresponding less conservative results have been derived by integral inequality approach. The modified looped LKF has been introduced to fully capture the available characteristics of the membership functions, fractional-delayed states, and actual sampling pattern, simultaneously. The stability and stabilization criterion have been obtained by constructing suitable LKF for the considered nonlinear model in terms of LMIs. Moreover, the Lyapunov stability theory has been utilized to derive the stability conditions of the considered nonlinear system. To prove the superiority of the present study, we have compared their study with the existing works.

The following topics were interacted with students to update their basic skills in real time applications.

1. The modified looped functional-based LKF is constructed to design the SD control for the T-S fuzzy systems. It provides more available information of the fuzzy membership function, actual sampling pattern and fractional delayed state over the whole sampling period.
2. The obtained control method can solve the problems of delayed-states and variable sampling for nonlinear model. By employing the proposed control scheme, the SD controller can ensure that the T-S fuzzy model is asymptotically stable.
3. A fuzzy-dependent control approach and integral inequality technique are applied to derive the less conservative stabilization conditions of T-S fuzzy systems through enlarging the upper bound of sampling period. Compared with existing works the advantages of the designed control method will be demonstrate in the numerical examples via obtaining the largest sampling period.



The session concluded with the vote of thanks given by Dr. Tamilazaran, Assistant Professor, Dept of Mathematics.

**Event In-charges:**

Dr. Ramaswamy Subramaniyam (Asst. Professor)
Dr. Tamilazaran (Asst. Professor)

On behalf of students and faculty, my sincere thanks to our Secretary and Correspondent Sir, Principal Sir, Vice-Principal (Academics), Vice-Principal (Administration) Deans, HODs and staff for their support and cooperation in organizing MITS Math Fest-2023 during the Mathematics Week.