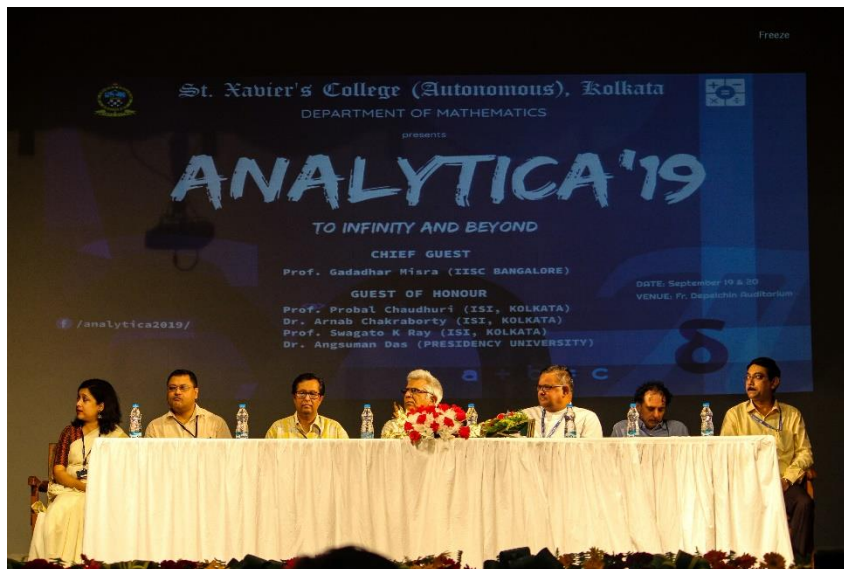*Departmental Report*

The Mathematics department of St. Xavier's College(Autonomous), Kolkata is one of the oldest departments of the college and is proud to be the inheritor of a glorious heritage.
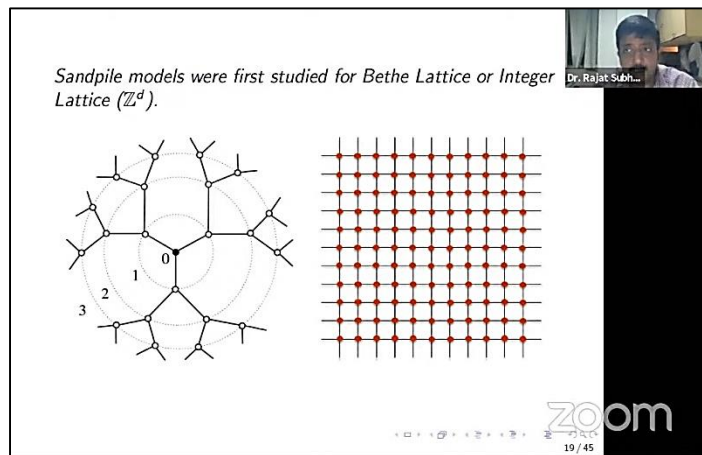
Departmental Activities:

➤ Analytica is a two-day Mathematical fest graced by the presence of eminent Mathematicians from across the country enlightening undergraduate students with their lecturers on various topics. Students from various colleges and institutes participate in large numbers in various events such as paper presentations, quiz, treasure hunt, chess, cryptography, pubg, triwizard tournament, polemic etc. Since its commencement in 2008, professors and students have been actively involved in this Mathematical venture thereby preserving the legacy of endowing ambitious learners with the essence of Mathematics "the queen of all sciences".

➤ "Analytica, 2019" held on 19th and 20th of September was highlighted by lectures given by eminent academicians and varied Mathematical events inclusive of paper presentations by students. The departmental magazine "Beacon" was also unveiled on

this occasion and circulated amongst students as well as professors adding to the spirit of the subject and its revelations.

➤ This year we had Professor Gadadhar Misra from Indian Institute of Science, Bangalore, an eminent Mathematician, as our Chief Guest. This apart we also had amongst us Prof. Probal Chaudhuri, Prof. Swagato. K. Roy, Prof. Arnab Chakraborty from Indian Statistical Institute, Kolkata and Prof. Angsuman Das from Presidency University delivering lectures on different areas of Mathematics and enthralling an audience of around 300 that comprised of students, teachers of our college as well as other colleges and institutes across the city with the fascinating aspects of this subject. The papers presentations and the

interactive sessions that took place during this period threw light upon the quest for exploring the mysteries and embracing the complexities of Mathematics.

Seminars/ Conferences/Webinars:

- The Department of Mathematics along with the Department of Physics organized a one-day international workshop on Coarse Geometry on 16th August, 2019 that was partially funded by DBT star college grant. Dr. Atish J.Mitra, from Mathematics Department of Montana Tech (University of Montana), USA delivered a talk on Coarse Geometry which is a way of exploring large-scale geometric structures of a space while ignoring small scale behavior.

- Dr. Rajat Subhra Hazra, the Shanti Swaroop Bhatnagar Awardee for Science and Technology, 2020 delivered a talk on "Sandpile, Odometers, Membrane and Random Forests" at a webinar organized by the Department of Mathematics on 17th October, 2020.

Father-Goreux Colloquium:

This year the Department initiated the lecture-series named after "Father Goreux", an eminent Mathematician and a great Mathematics teacher. The Father Goreux Memorial lecture was inaugurated by Rev.Dr. Dominic Savio, Principal, St.Xavier's College on 29th February, 2020. Dr. Shubhabrata Das from Presidency University was the guest of honour who delivered a lecture on the topic"Groups and Symmetries".

Academic Achievements by the faculty members:

➤ Pabitra Debnath was awarded the PhD degree in Mathematics from the University of Burdwan on 25th August, 2020, the title of his thesis being "A Study on Operators and its invariant Points over a Different Metric Spaces".

➤ Pabitra Debnath has published papers on the following areas : " On I and I^k convergence in n-normed linear spaces", "Some result on fixed point of expansive mapping over

modular metric space" ," Fixed point of mappings with contractive iterates in a modular metric space" to name a few in reputed international journals.

- ➤ Gaurab Tripathi has published papers on the following areas: "Ideals of the form-{1} (XY)" and "Primary decomposition and normality of certain determinantal ideals". Both the articles are published in reputed international journals.

- ➤ Sucharita Roy has published a paper on "Bayes meets Riemann- Bayesian Characterisation of Infinite series with application to Riemann Hypothesis"in the International journal of Applied Mathematics and Statistics. "Bayesian Characterisation of Random Infinite Series", "Function Optimization with Posterior Gaussian Derivative Process" and "Bayesian Characterizations of Properties of Stochastic Processes with Applications" are some other arxiv submissions.

- ➤ This apart several faculty members from our department presented papers as well as participated in various national and international conferences, seminars, workshops and webinars.

Student's performance:

Quite a few students of the department got admitted in various institutes/ universities to pursue M.Sc in Mathematics: ISI, Kolkata; IIT, Bombay; Presidency University; Jadavpur University; University of Calcutta; Ramakrishna Mission Vivekananda Educational and Research Institute (RKMVERI) to name a few.