

**POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR 11, CHANDIGARH**



**Department of Mathematics: Sigma  
(Session: 2022-2023)**

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## Lecture Series on ‘Real Analysis’

Under the able guidance of Prof. (Dr.) Anita Kaushal, **SIGMA**- the Math Society, under the aegis of IQAC, organized a lecture series for 6<sup>th</sup> semester students of B.A. /B.Sc. Non-Medical and Computer Science on the topics of ‘Real Analysis’ for the session 2022-23 by Poonam Rani, an alumna of the college, presently pursuing her PhD with Prime Minister Research Fellowship at IIT Gandhinagar. The aim of the lecture series was to enhance the in-depth knowledge along with revision of the basic concepts of Real Analysis which will help the students in competitive exams as well as in their higher studies of Mathematics.

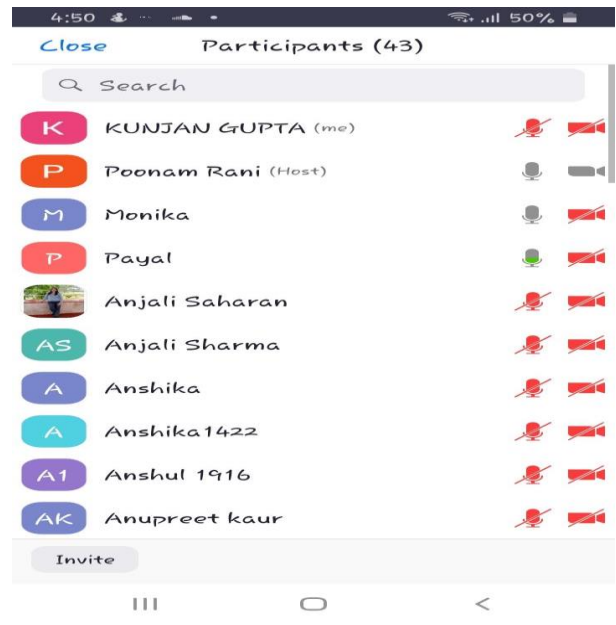
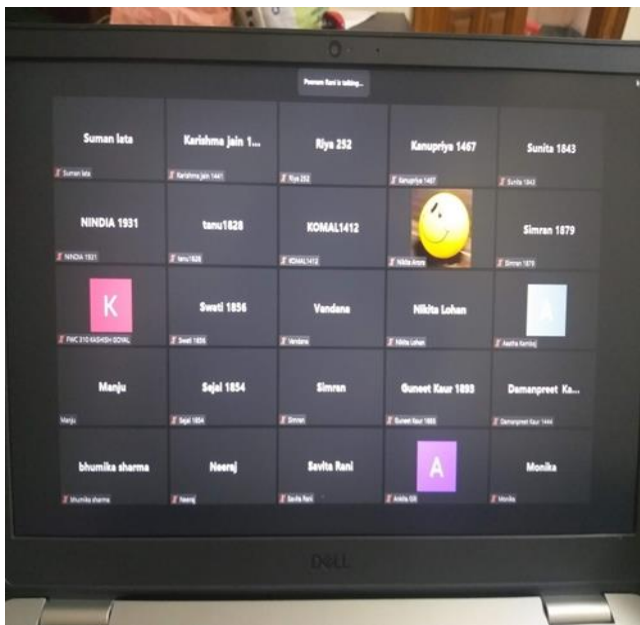
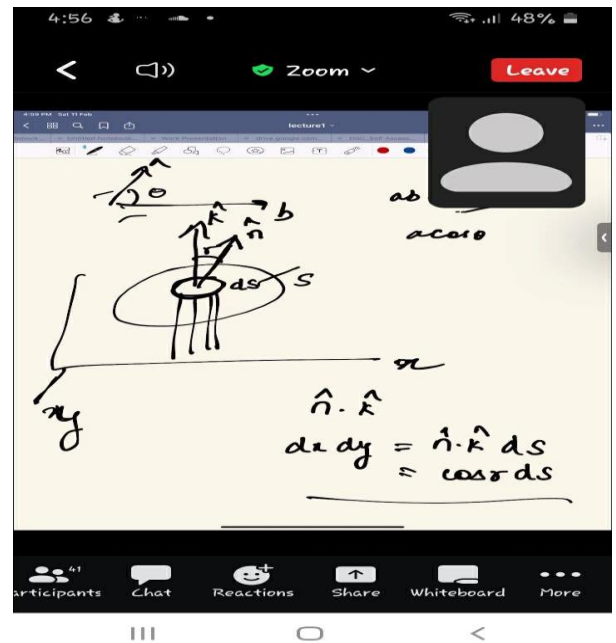
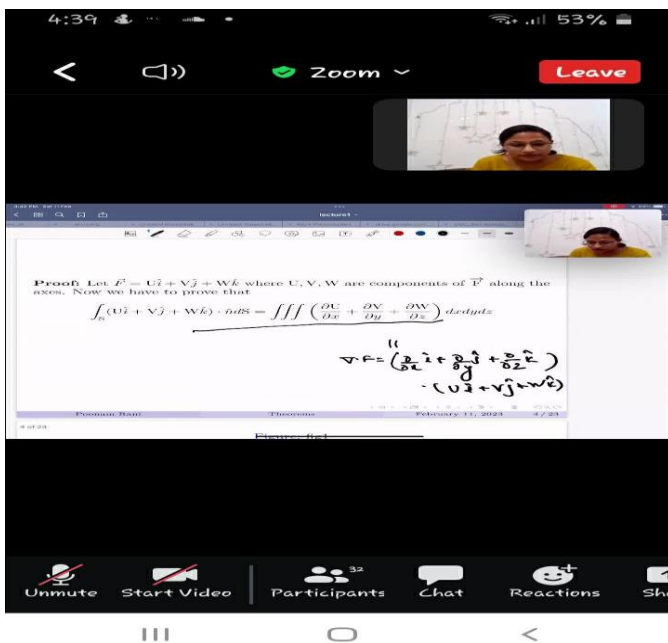


Resource Person: Ms. Poonam Rani  
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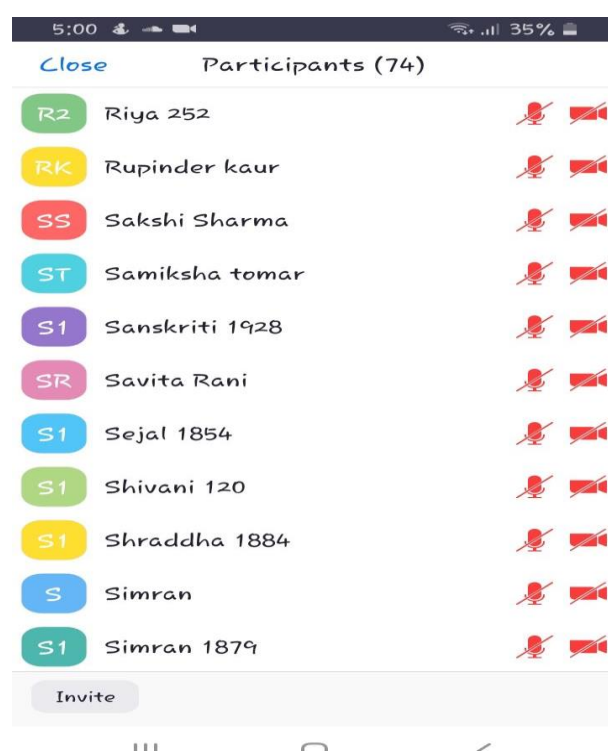
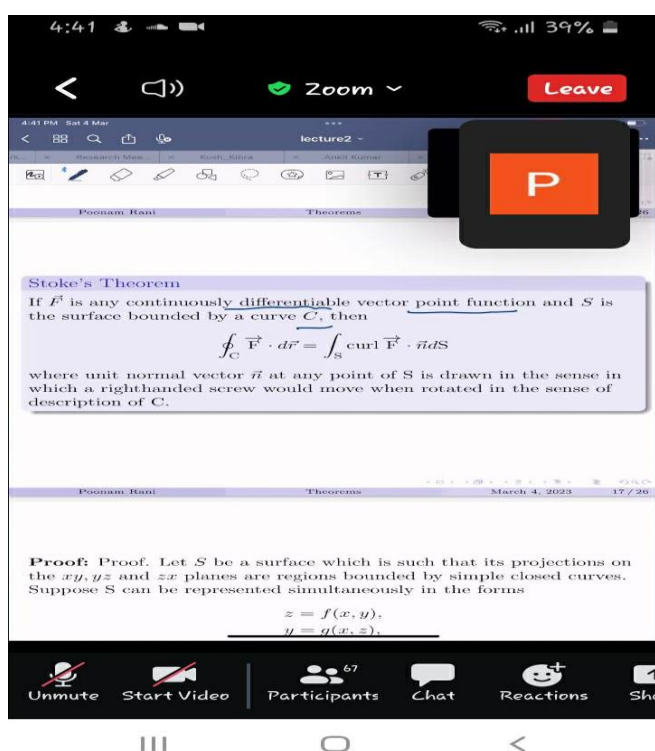
## Lecture 1: Gauss's Divergence theorem and Green's Theorem

Under the able guidance of Prof. (Dr.) Anita Kaushal, **SIGMA-** the Math Society, under the aegis of IQAC, organized a lecture series. The first lecture of the series took place on **11th February, 2023** from 4:30 p.m. to 5:30 p.m. The lecture started with the introduction of the speaker by Ms. Kunjan Gupta, Head, Department of Mathematics and coordinator of the event. Ms. Poonam Rani started the lecture by the revision of some basic concepts of real analysis followed by detail explanation of the Gauss's Divergence theorem and Green's Theorem along with their physical significance. Around 40 students of B.A. /B.Sc.-III Non-Medical and Computer Science attended the lecture and cleared their doubts on the topic in the after discussion session.



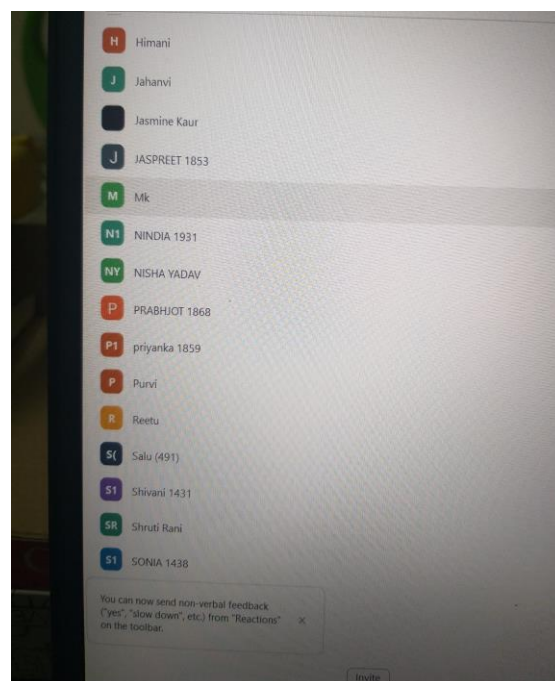
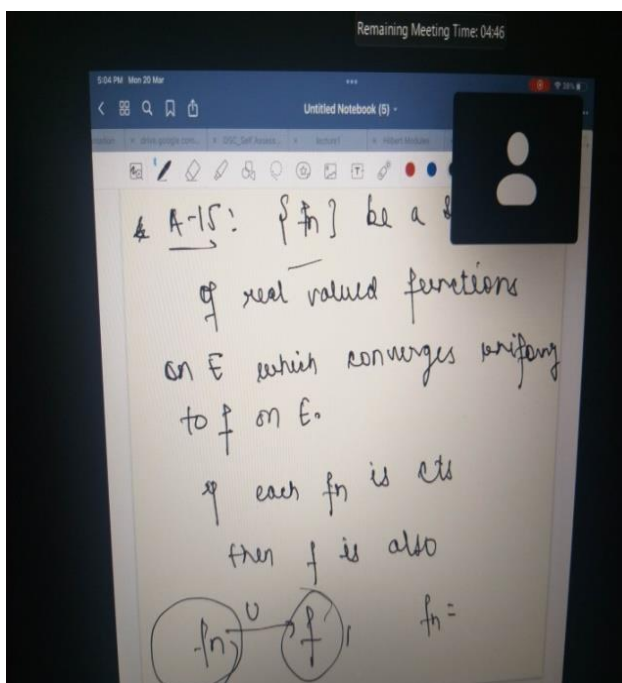
## Lecture 2: Stoke's Theorem

Under the able guidance of Prof. (Dr.) Anita Kaushal, **SIGMA-** the Math Society, under the aegis of IQAC, organized a lecture series. The second lecture of the series took place on **4th March, 2023** from 4:30 p.m. to 5:30 p.m. The lecture started with answering the questions of the students from the last lecture by Ms. Poonam and then she explained the Physical significance of Stoke's Theorem and proved the same in detail. Around 75 students of B.A. /B.Sc.-III Non-Medical and Computer Science attended the lecture and participated actively in the after discussion session. Ms. Kunjan Gupta, Head, Department of Mathematics and coordinator of the event concluded the lecture by thanking the speaker for sharing her knowledge with our students.



### Lecture 3: Uniform Convergence and Continuity of Sequence

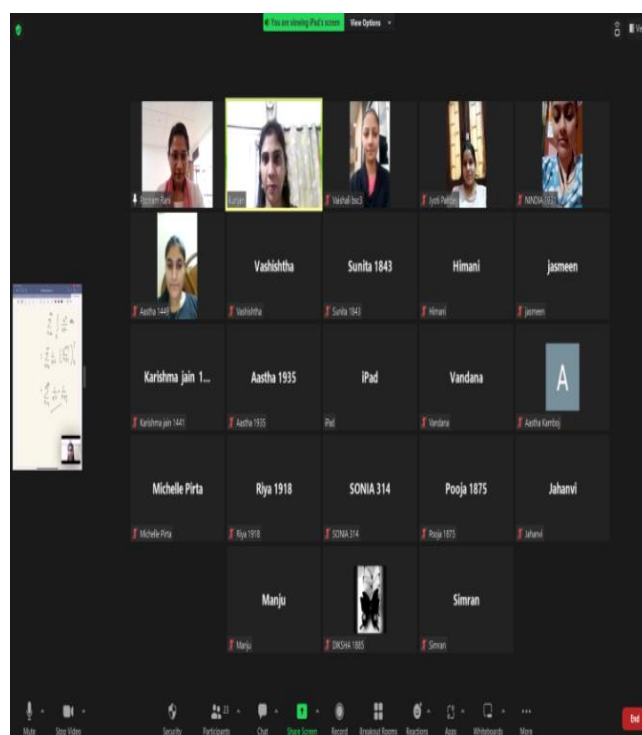
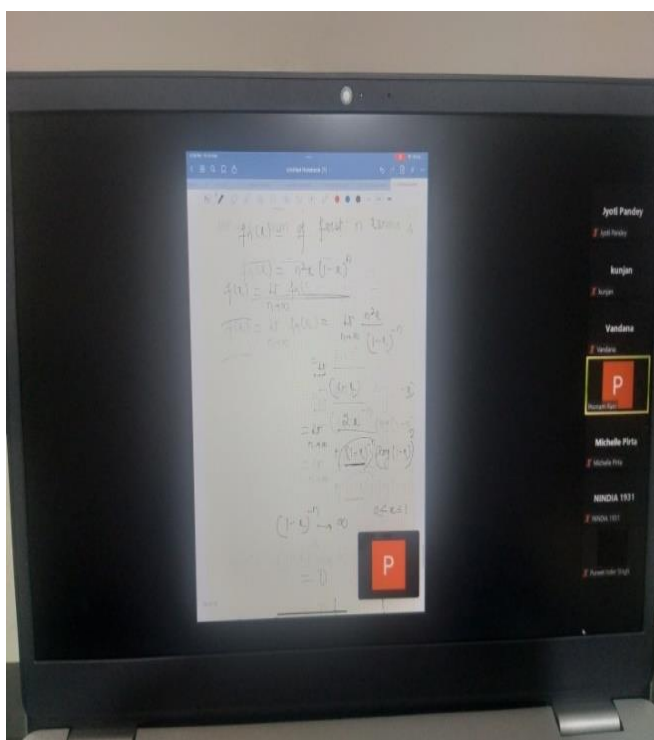
Under the able guidance of Prof. (Dr.) Anita Kaushal, **SIGMA-** the Math Society, under the aegis of IQAC, organized a lecture series. The third lecture of the series was held on **20<sup>th</sup> March, 2023** from 4:30 p.m. to 5:30 p.m. Ms. Kunjan Gupta, Head, Department of Mathematics and coordinator of the event invited the speaker and encouraged the students to clear their doubts from the previous lecture. So the lecture started with the questions of the students answered by Ms. Poonam followed by the detail explanation of the Cluster Point of sequence, various theorems for uniformly convergent sequence of function, the Uniform Convergence and Continuity, Sum function of uniformly convergent series of continuous function is itself continuous. She concluded the lecture by solving various examples illustrating and using above theorems. Around 50 students of B.A. /B.Sc.-III Non-Medical and Computer Science attended the lecture and participated actively by asking questions during the lecture.





## Lecture 4: Riemann Integration and Riemann Stieltjes Integral

Under the able guidance of Prof. (Dr.) Anita Kaushal, **SIGMA-** the Math Society, under the aegis of IQAC, organized a lecture series. The fourth lecture of the series was held on **31<sup>st</sup> March, 2023** from 4:30 p.m. to 5:30 p.m. Ms. Kunjan Gupta, Head, Department of Mathematics and coordinator of the event welcomed the speaker and invited questions from the last lecture from the students which were answered brilliantly by Ms. Poonam followed by the discussion on the Uniform Convergence and Riemann Integration, definition of Riemann Stieltjes integral and Term by term integration. She explained the topic well by solving various examples using above theorems. Around 70 students of B.A. /B.Sc.-III Non-Medical and Computer Science attended the lecture and benefitted through the same.



## Lecture 5: Uniform Convergence and Differentiation

Under the able guidance of Prof. (Dr.) Anita Kaushal, **SIGMA-** the Math Society, under the aegis of IQAC, organized a lecture series. The final lecture of the series was held on **11<sup>th</sup> April, 2023** from 4:30 p.m. to 5:30 p.m. The lecture started with answering the questions of the students from the last lecture by Ms. Poonam and then she explained various topics like Uniform Convergence and Differentiation, Weirstrass Approximation Theorem, Term by term differentiation, there exists a real continuous function which is nowhere differentiable using various examples related to these articles. She also guided the students about the preparation of competitive exams and also encouraged them to pursue their masters in the subject by sharing her own experiences to reach IIT Kanpur for M.Sc. Math and now pursuing her research from IIT, Gandhinagar.

Around 70 students of B.A. /B.Sc.-III Non-Medical and Computer Science attended the lecture enthusiastically and also shared their experiences about the series. Students felt motivated and expressed their desire for more such topic based lecture series.

Ms. Kunjan Gupta, Head, Department of Mathematics and coordinator of the event concluded the lecture by giving vote of thanks to the speaker and the students for making the series a success.

