



SRI CHANDRASEKHARENDRASARASWATHI VISWA MAHAVIDYALAYA (SCSVMV)

(Deemed to be University u/s 3 of UGC Act 1956) (Accredited with "A" Grade
by NAAC)

Enathur, Kanchipuram-631561.

DEPARTMENT OF MATHEMATICS

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GANITHVAARTHA

Issue-XII

January-June 2022

ABOUT THE DEPARTMENT

The department of Mathematics, established in the year 1994, aims to impart state of the art knowledge, and practical skills in the latest advancements in the respective domain to achieve excellence in both academic and research perspectives. The department fosters excellence in B.Sc., M.Sc., and Ph.D (Regular and Part-Time) and acts as a supporting department to all Engineering courses, B.Sc.(CS), B.C.A, M.C.A and M.B.A. The department has qualified and goal-oriented 14 faculty members who are actively involved in research in diverse areas such as Algebra, Graph Theory, Queuing Theory and Operations Research. Interdisciplinary research is also encouraged. The department is strengthened by faculty team of 14 doctorates. So far 34 Ph.D degrees have been awarded and five scholars are pursuing research under the department. The focus on research promotes the publications and 297 research papers were published in the last five years.

GREETINGS FROM DEPARTMENT CHAIR

It is a great pleasure to extend my heartfelt greetings to the readers of the Twelfth edition of Ganithavaartha, department newsletter. I sincerely hope that you will enjoy reading about the accomplishments of our faculty. The newsletter is published twice in a year. This issue contains the activities about our department from July to December, 2021. The department is regularly organizing workshops, seminars, quality enrichment programs, research colloquiums etc., to be familiar in the latest trends in mathematics and career guidance programs and skill development courses are introduced for our students to face the competitive world. Also, our students are encouraged to actively participate in various competitions organized by other departments and to present papers in conferences and seminars.



Dr.K.Srinivasa Rao

FACULTY TEAM

S.No.	Name	Designation	Area of Specialization
1.	Prof. Dr. K. Srinivasarao	Professor & Head	Algebra
2.	Dr. N. Saradha	Assistant Professor	Graph Theory
3.	Dr. P. Nagarajan	Assistant Professor	Queuing Theory
4.	Dr. P. Balaji	Assistant Professor	Petri Nets
5.	Dr. D. Vijayalakshmi	Assistant Professor	Graph Theory
6.	Dr. E. Geetha	Assistant Professor	Fluid Dynamics
7.	Dr. R. Mageswari	Assistant Professor	Graph Theory
8.	Dr. K. Pramila	Assistant Professor	Fuzzy Set Theory
9.	Dr. A. Gayathri	Assistant Professor	Mathematical Physics
10.	Dr. J. Sengamalaselvi	Assistant Professor	Applied Mathematics using ICT
11.	Dr. V. K. Radhakrishnan	Assistant Professor	Operations Research
12.	Dr. A. Dhanalakshmi	Assistant Professor	Graph Theory
13.	Dr. K. Bharathi	Assistant Professor	Operations Research
14.	Dr. T. N. Kavitha	Assistant Professor	Algebra

OUTREACH PROGRAMMES:

1. **Dr .K. SrinivasaRao** , Prof .of the Mathematics , delivered a lecture on Basics of MATLAB in Online One week Hands on Workshop on Programming Skills Using Python, organized by the department of Electronics and Communication Engineering, B.P.S. Mahila Vishwavidyalaya, KhanpurKalan, Haryana, from 21.02.2022 to 28.02. 2022.

2. **Dr. R.Mageswari** , Asst. Prof of Mathematics acted as Resource Person in the webinar on “Vedic Algebraic Division” organized by the Science and Humanities Association, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore & SSUN, Tamilnadu on 22.03.2022.



3. **Dr V.K.Radhakrishnan** ,Asst.Prof of Mathematics acted as a Resource Person in a One Day National Level Workshop on Open Research Problems in Operations Research, organised by AVIT, Paiyanoor, Chennai on 31.05.2022.

4. **Dr V.K.Radhakrishnan** ,Asst.Prof of Mathematics acted as a Resource Person in a One-Day Workshop on Statistical Analysis using Mega Stat in Excel for Non-Teaching and Technical Staffs of SCSVMV organised by IQAC of Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya on 04.06.2022.

5. **Dr. T N Kavitha** , Asst prof of Mathematics acted as Juri in the International virtual Conference on research innovation in Science and Technology held on 02.03.2022 the Technical session of Kings Engineering College, Chennai.

6. **Dr. T N Kavitha** ,Asst prof of Mathematics has Invited as Special Guest for annual academic award function and deliver a talk titled ‘Real life Application of Mathematics’ held on 30.05.2022 at Sri Sankara Arts and Science College, Enathur, Kanchipuram.



JOURNAL PUBLICATION

1. **K.Srinivasa Rao**, *K.N.Prakasha, K.Saravanan*, Ismail NaciCangul, Maximum Degree Energy, Advanced Studies in Contemporary Mathematics, 31(2021), No.1, pp.49-66.
2. **K. Srinivasa Rao**, *B. Amudha*, Symmetric Division Deg(SDD) Index, SDD and Randic Matrices, Proceedings of Jangeon Mathematical Society, 24(2021), No.3, pp 389-402.
3. **K.Srinivasa Rao**, *K.Saravanan, K.N.Prakasha, Ismail NaciCangul*, Maximum and Minimum Degree Energies of p-Splitting and p-Shadow Graphs, TWMS Journal of Applied and Engineering Mathematics, Vol 12(1), 2022, pp.1-10.4. **K.SrinivasaRao**, Hosoya Polynomial and Wiener Index of Kings's Graph Type Nanostructure, MuktsShabd Journal, Vol XI, Issue-1, 2022, page.No:272- 282.
4. **V K Radhakrishnan**, *T Venugopal*, Monte-Carlo Simulation Study on the Queueing Model of Kanchi Kamakshi Temple, Mukts-Shabd Journal, Vol. X, Issue VII, July 2021 pp. 27-34.

PROGRAMMES ORGANIZED BY THE DEPARTMENT

NATIONAL WORKSHOP ON MEDICAL STATISTICS USING SPSS

Department of Mathematics Organised National **WORKSHOP ON MEDICAL STATISTICS USING SPSS** on 10/03.2022. The Program started with welcome address by **Dr.N.Saradha**, organizing secretary, Assistant Professor of Mathematics. **Dr. Vijayalakshmi**, Asst. Professor of Mathematics introduce the Resource person **Prof. Dr. V. Ramanathan**, Controller of Examination, SCSVMV, Kanchipuram. **Prof.Dr.K.Srinivasa Rao**, HOD, Department of Mathematics made the felicitate the resource person.

The first session of the program was comprised of Measurement of Scales by **Prof. Dr. V. Ramanathan**, Controller of Examination at 11 am at MBA Seminar Hall . It followed by tea-break from 12.00 PM -12.10pm.

After the break, the last session of day was started at 12 15pm. This session was continued with Parametric and nonparametric test and it would continue upto 1.10pm. After this introduction, He explained about the data representation ; computation of measures of central tendency, t-test, chi-square test; oneway ANOVA Two-way ANOVA, Correlation coefficient and Regression lines in SPSS Software.The session end at 1.50pm. It gives the good knowledge of Statistics tools in SPSS Software.This program came to an end in a grand manner with the vote of thanks proposed by **Dr.P. Nagarajan**, Asst. Professor of Mathematics..

Participant from Sri Jayendra Saraswathi Ayurveda Medical College and Hospital, SCSVMV University are attended the program. More than 40 participants were benefited from the program. we conclude that they were eagerly awaiting for the next program.



**AN ENRICHMENT PROGRAMME AT GOVERNMENT HIGH SCHOOL – ENATHUR
(18.03.22 , 21.03.22 & 23.03.22)**

NSS – Unit I of SCSVMV organized an Enrichment Programme at Government High School, Enathur jointly with Department of Mathematics, SCSVMV on 18/03/22 , 21/03/22 & 23/03/22 . This is an initiative to help the Enathur Government High School students to overcome the difficulties in their studies due to the pandemic. This Special Booster programme was a grand success by the full support extended by the Head, Department of Mathematics **Dr.K.Srinivasa Rao** by permitting the faculties of Mathematics for three days. All nine faculties cleared doubts (3.00 pm – 4.30 p.m) to the students studying 6th std to 10th std in a simple way. Our faculties motivated the students, encouraged them with simple compliments and tuned them in right direction. The following faculties from department of Mathematics did their role in a remarkable way and make this special programme a grand success.

<i>S.No</i>	<i>Name</i>	<i>Designation</i>
1.	Dr.R.Mageswari	AP/Maths &NSS Programme Officer
2.	Dr.N.Saradha	AP/Maths
3.	Dr.D.Vijayalakshmi	AP/Maths
4.	Dr.E.Geetha	AP/Maths
5.	Dr.K.Pramila	AP/Maths
6.	Dr.J.Sengamala Selvi	AP/Maths
7.	Dr.A.Dhanalakshmi	AP/Maths
8.	Dr.K.Bharathi	AP/Maths
9.	Dr.T.N.Kavitha	AP/Maths

All students and faculties enjoyed this Special Booster Programme. Totally 250 students benefited by this programme. NSS Programme Coordinator **Dr.P.Nagarajan** and NSS Programme officer Dr.R.Mageswari made all the arrangements.



TWO WEEK INTRODUCTORY COURSE IN VEDIC MATHEMATICS ***(11-05-2022 – 26-05-2022)***

As per the directions of the **Honorable Vice-Chancellor**, the Department of Mathematics organized Two Week Introductory Course in Mathematics from 11-05-2022 to 26-05-2022 for the faculty members of SCSVMV. 64 faculty members from various departments participated in the program. :

TOPIC: VEDIC MULTIPLICATION METHODS

Day-1 (11-05-2022)

On the first day of the program, **Dr. D. Vijayalakshmi**, Assistant Professor of Mathematics, explained the multiplication of numbers by 5 and 11 in detail using Vedic tricks. Multiplications of any two-digit number by any two-digit number with minimum steps of calculation were practiced with examples. Application of the sutra “**NIKHILAM NAVATAS CHARAMAM DASATAH**” was explained with suitable examples along with a clear introduction about the base number and choosing of the base number.

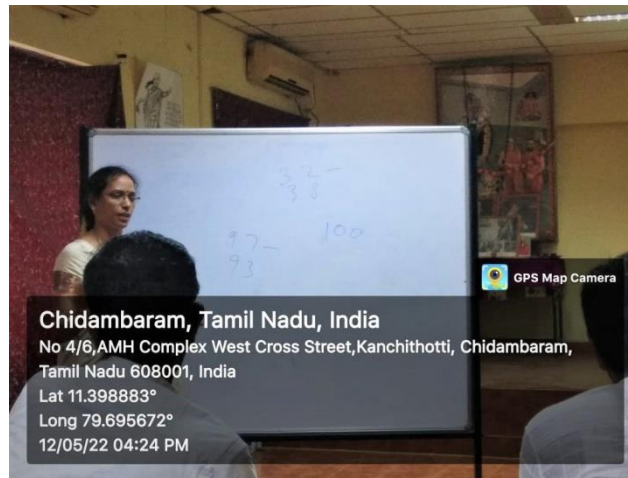


MULTIPLICATION USING VARIOUS SUTRAS

Day-2 (12-05-2022)

On the second day, **Dr.A.Gayathri**, Asst. Prof. of Mathematics explained various sutras applied for multiplication. Three sutras namely “**Ekadhikena Purvena**”, “**Nikhilam Navatashcaramam Dasatah**” & “**Urdhuva-Tiryagbhyam**” were explained and how the above sutras help us to find the

product of two numbers whose sum of last two digits equal to 10, to find the product of any two numbers whose Purva is same, to find the product of any numbers with any digits was illustrated with examples.



TOPIC: DIVISION

Day-3 (13-05-2022)

On the third day of the program, **Dr.R.Mageswari**, Assistant Professor of Mathematics, explained the concept of the vinculum and its simple applications. Then, explained the Vedic methodology for numerical division for the above base number and polynomial division using the sutras “**Nikhilam Navatashcaramam Dasatah**” and **Paravaartya Yojayet**” with suitable examples.



FLAVORS OF MATHEMATICS IN VEDAS AND MANTRAS

Day-4(14-05-2022)

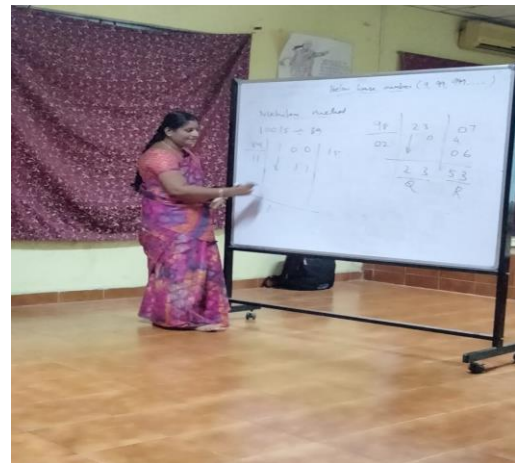
On the fourth day of the program, **Dr. T.N. Kavitha**, Assistant Professor of Mathematics, explained the Vedic Mathematics sutra: **Shunyam Saamyasamuuay** and how Bagavad Geetha’s sloka is compared here. By decoding the slokas, we can realize that any slokas in the ancient Hindu manuscripts have more than one meaning and all concepts are already there in the Vedas. For example, Vedic numeric for Papa(sin) is 11, and the Vedic numeric of Bhagavadgeetha’s sloka is 74951211551525280847411150115556, which is divisible by 11.



DIVISION

Day-5 (16-05-2022)

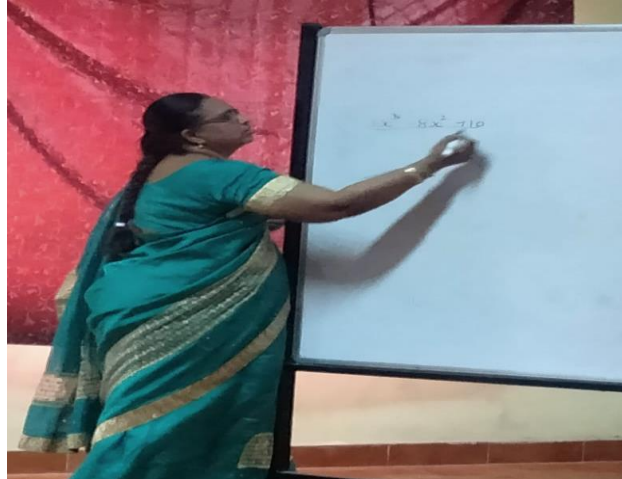
On the fifth day lecture of the program, **Dr.E.Geetha**, Assistant Professor of Mathematics, delivered division in numerals by using two different methods, namely **Nikhilam** method and Flag division method. The Nikhilam method is used to divide any number by the number which is below base number. The flag division method is used to find the division of any number by any number by various examples.



PARTIAL FRACTIONS-USING PARAVARTYAYOJAYET SUTRA

Day: 6 (17/05/2022)

On the Sixth day of the Programme, **Dr.K.Pramila**, Assistant Professor of Mathematics, discussed the decomposition of complex rational expression into a simpler partial fraction using **Paravartya Yojayet Sutra**. Three types of partial fractions (i) Non-Repeated Linear Factors (ii) Repeated Linear Factors and some Non-repeated Linear Factors (iii) Linear Factors along with Quadratic Factors were covered on that day.



VEDIC MULTIPLICATION METHODS

Day-7 (18-05-2022)

On the seventh day of the program, **Dr.N.Saradha**, Asst. Prof. of Mathematics, explained about various sutras applied for multiplication. Multiplication of any numbers by 25 and 50, was explained in detail using Vedic Sutra: **Anurupyena**. Using Vedic Sutra” **Adya madyena ntya mantyena**” how to find the product of any two-digit number by any two-digit number in which the sum of sum first digit is 10 and the last digits are the same is explained with some examples. The application of the sutra “**Urdhuva-Tiryagbhyam**” in the multiplication of any number with 111,1111,11111 was explained with suitable examples. Applying Vedic Formula, “**Eka nyunena Purvena**” and “**Nikhilam**” in finding the product of any numbers with 9,99,9999,9999, etc., was illustrated with an examples.



ADDITION AND SUBTRACTION USING VEDIC MATHEMATICS

Day - 8 (19-05-2022)

On the eighth day of the program, **Dr.J. Sengamalaselvi**, Assistant Professor of Mathematics, explained the classification of Addition such as Line addition (**Dhamshamsha-Dropping Tens**), Spark addition (**Vilokanam-Observation**) and Classification of Subtraction such as Vinculum method (**Nikhilam Navatah Charamam Dasatah- All from 9 and last from 10**) and Base Complement method (**Vyavakalanam**) with suitable examples. More than that, exceptional cases of Addition and Subtraction are also practiced with examples.



SQUARES AND SQUARE ROOT BY VEDIC MATHEMATICS
Day-9(20-05-2022)

On the ninth day of the program, **Dr.K.Bharathi**, Assistant Professor of Mathematics, explained the Vedic Math sutra **Dvandayoga** trick with examples and the use of it in squaring the numbers easily. The Vedic Math sutra **Vilokanam** trick is a powerful tool for finding square root values within a few seconds and is explained in steps.



CUBE & CUBE ROOTS
Day- 10 (21-05-2022)

On the 10th day of the program, **Dr A.Dhanalakshmi**, Assistant Professor of Mathematics, explained the sutras **Anurupyena and Yavadunam** to find the cube. The methods used to find the cube roots were also explained to the participants.



TOPIC: FACTORIZATION
11 (23-05-2022)

On the 11th day of the program, **Dr. P.Balaji**, Assistant Professor of Mathematics explained the factorization of quadratic expressions using **Anurupenya and Adyamantya nanthamantha** sutras. Also, factorizing cubic expressions using **Parvarthaya Yoojyatha** sutra was discussed.



MAGIC SQUARE

Day-12 (24.05.22)

On the 12th day of the program, **Dr.P. Nagarajan**, Assistant Professor of Mathematics, has given a lecture on the topic "Magic Squares", which is covered by the Vedic sutra "**Paravartya Yojayet**," which means "Transpose and Apply." The presentation began with an overview of magic squares, followed by a discussion of their history, odd-order magic squares, properties of magic squares, and even order magic squares. Using examples and animation, Vedic ways of solving different order magic squares were described in-depth during the lecture.



SULBA SUTRA – AN INTRODUCTION

Date: 25.05.2022

On the 13th day of the program, **Dr Radhakrishnan V K**, Assistant professor of Mathematics, introduced the concepts and methodologies of geometrical shape used in ancient India through the topic Sulba Sutras – An Introduction. **Sulba** Sutras, branches of Srauta Sutras, deal specifically with rules for the measurement and construction of various sacrificial fires and altars. The word Sulba is derived from the root 'Sulb' meaning the act of measurement; hence Sulba Sutra means the study of shapes – Geometry. He also highlighted the existence of the construction of the right triangle before the period of Pythagoras from the sutras made by **Apastamba** and **Baudhayana**. Faculties from various departments participated in this lecture and got the advantage of knowing the usage of mathematics in ancient India.



EQUATIONS
Day14 (26-05-2022)

On the 14th day of the program, **Dr. K.Srinivasa Rao**, Professor of Mathematics explained Vedic mathematics techniques to solve equations using the Vedic sutra: **Shunyam Saamyasamuccaye** and also explained the methods to solve quadratic equations using **vilokam**.



PAPERS PRESENTED BY FACULTIES

1. **K. SrinivasaRao**, Presented a paper entitled on Maximum Degree Laplacian Energy at 5th International Conference on Current Scenario in Pure and Applied Mathematics, organized by PG and Research Department of Mathematics, Kongunadu Arts and Science College, Coimbatore, Tamilnadu, January, 27-28,2022.
2. **P.Nagarajan**, Presented a paper entitled on $M^X / G^{(1,K)} / 1$ queue unreliable server with Bernoulli vacation, 8th International Conference on Mathematics and Computing, VIT Vellore, from Jan 06-08, 2022.
3. **P.Balaji**, Presented a paper entitled on Siphon-trap analysis of safe Petri net and Strictly conservative Petri nets in the National Conference on Multidisciplinary approach in teaching with collaborating Technology(NCMATCT-22) held on 29 - 30April 2022, at Government Arts and Science college, Arakonam.

**SUMMARY OF ACADEMIC ACHIEVEMENTS DURING
JANUARY2022-JUNE 2022**

Number of Publications	No. of paper presented in National/International conferences	No.of Seminars/workshops attended	No.of Outreach activities	Programmes Organized by the Department	Full Paper Published in the Proceedings
04	03	38	06	03	02