SHRIMATI INDIRA GANDHI COLLEGE

(Affiliated to Bharathidasan University)
Nationally Accredited at 'A' Grade (4th Cycle) by NAAC | An ISO 9001 : 2015 Certified Institution
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Name : Dr..J.Shanthi

Designation : Assistant Professor & Head

Department : PG & Research Department of Mathematics

Qualification : M.Sc., M.Phil.,Ph.D

Experience : **Teaching**: 18 **Research**: 10

Area of Specialization(s) : Number Theory

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Academic Qualifications

Degree	Branch	Institution / University Name	Year of Graduation
Ph.D	Mathematics	Shrimati Indira Gandhi College,Trichy	2018
M.Phil	Mathematics	Shrimati Indira Gandhi College,Trichy	2007
M.Sc	Mathematics	Shrimati Indira Gandhi College,Trichy	2006
B.Sc	Mathematics	Shrimati Indira Gandhi College,Trichy	2004

Research Publications (Indexed)

2015

1. M.A.Gopalan,S.Vidhyalakshmi,J.Shanthi,D.Kanaka,OnthenegativePellEquation $y^2=15x^2-6$,SJPMS,Vol-2,Issue-2A, PP:123-128.
2. M.A.Gopalan,S.Vidhyalakshmi,J.Shanthi,Observationonthebiquadraticequationwiththree unknowns$x^2 - 4xy + 11y^2 = 11z^4$,UNIETS,Vol-II,Issue-VIII,Aug-2015,
3. M.A.Gopalan,S.Vidhyalakshmi,J.Shanthi,M.BhuvaneswariOnbiquadraticequation with three unknowns $10(x^2 + y^2) - 16xy = 65z^4$, IJRCD, Vol-1,Issue-2,June2015.
4. M.A.Gopalan,S.Vidhyalakshmi,J.Shanthi,Pythagoreantrianglewith3(hypoteneous)+4isa Nasty number,IRJET, Vol-2,Issue-1,Jan-2015
5. M. A. Gopalan, S. Vidhyalakshmi, J. Shanthi, On biquadratic equation with fiveunknowns$2(x^3 + y^3)(x - y) + x^4 - y^4 = 2(z^2 - w^2)p^2$, UNIETS, Vol-1,Issue-IV,Sep 2015.

6. M. A. Gopalan, S. Vidhyalakshmi, J. Shanthi, S. Suguna, Binary quadratic equationwithtwounknowns$x^2-4xy+y^2+32x=0$,BOMSR,Vol-1,Issue-3,Jul-2015.
7. M. A. Gopalan, S. Vidhyalakshmi, J. Shanthi, Gaussian integer solutions for theellipticparaboloid$x^2+2y^2=4z$,Vol-4,Issue-7,July-2015,674-679.
8. M.A.Gopalan,S.Vidhyalakshmi,J.Shanthi,OninterestingDiophantineproblem ,IJMRME,Vol-1,Issue-12015,168-170.
9. M. A. Gopalan, S. Vidhyalakshmi, J. Shanthi, K.AgalyaOn interesting Triple IntegerSequencesscholars bulletin, Vol-1, Iss-7 ,Oct-2015,169-171.
10. M. A. Gopalan, S. Vidhyalakshmi, J. Shanthi, On interestingDiophantine problem,scholarsbulletin, Vol-1,Issue-7,Oct-2015,166-168
11. M. A. Gopalan, S. Vidhyalakshmi, J. Shanthi, On ternary cubic Diophantine equation$3(x^2 + y^2) - 5xy + x + y + 1 = 12z^3$, International journal of applied research ,vol1,Issue-8, 209-212.
12. M.A.Gopalan,S.Vidhyalakshmi,J.Shanthi,Gaussianinegersolutionsfortheelliptic paraboloid$x^2+y^2=102$,IJSEAS,Vol-1 Issue-2,May-2015.
13. M. A. Gopalan , J. Shanthi , S.Nandhini , On the ternary quadradic Diophantineequation$6z^2=6x^2-5y^2$,IJETMR,Vol-1,Issue-1April-2015,27-35.
14. M.A.Gopalan,S.Vidhyalakshmi,J.Shanthi,Onthecubicequationwithfourunknowns $x^3+4z^3=y^3+4w^3+6(x-y)^3$,IJMTT,Vol-20,NO-1,April-2015,75-84.

2016

1) "A new integer Sequence", International Journal of RecentTrends in Engineering&Research,Volume-2,Issue-6, June-2016.
2) "Onthenon-homogeneouscubicequationwith5unknown$9(X^3-Y^3)=Z^3-W^3+12P^2+16$", International Journal of Information Research & Review, Volume-3,Issue-6, 525-2528, June-2016.
3) "Onthenon-homogeneouscubicequationwith5unknowns$(a+1)^3(x^3-y^3)=(2a+1)(z^3-W^3)+6a^2P^2+2a^2$", International Journal of Mathematical ScientificEngineering& Technology, Volume 3,Issue-5, 2016.
4) "Observationinthebiguadsadicequationwithfiveunknowns4x3+4y3-2x2y=23P2(Z2-W2)Star", International Journal ,Volume-4, Issue 2(3) February-2016.
5) "On Special D(2)- quadruple", Asian Journal of science & Technology, Volume-7,Issue-04,Septemper-2016.
    1. "TheNon-homogeneouscubicequationwith5unknowns$x^4-y^4+2k(x^2-y^2)(x-y+k)=(a^2+b^2)(z^2-W^2)P^3$",Volume 2, N0.3, September-2016,Pg.No.8-13.
    2. "OnSpecialDio-quadtaplewithPropertyD(S^2+1)",WorldJournalofEngineeringResearch&Technolog

y,Volume-2,Issue-5,August-2016,Pg.No.142-145.

3. "ObservationontheNon-homogeneousscientificequationwithfiveunknowns2(x^2-y^2)(x^2+y^2-xy)=7(z^2-w^2)p^4",15(2) June-August2016, Pg.No.169-172.
4. "Onthetranscendentalequationwithsixunknowns2 $\sqrt{x^2+3y^2}$ +4$\sqrt{x^3+y^3}$ = Z^2+w^2",InternationalJournalofInnovetiveResearchinScience,Engineering&Technology, Volume-5, issue-8, August 2016, Pg.No.14385-14388.
5. "OnspecialD(17)-quadraple",InternationalJournalofstatistics&appliedmathematical(2016), 1(2),pg.no.04-05.

2017

1. "On the negative pelle quation $y^2 \square 7x^2 \square 14$ ",National Journal of Advanced Research olume3,issue1,20-24,January2017.
2. "On the positivepell equation $y^2 \square 10x^2 \square 33$",International Journal of Advanced research and development,volume2,issue1,91-96, January2017.
3. "On the hyperbola $y^2 \square 8x^2 \square 16$",International journal of advanced scientific research,volume2,issue1,37-41,January2017.
4. "On the binary quadratic Diophantine equation $y^2 \square 68x^2 \square 13$",International journal of advance deducation and research,volume2,issue1,59-63,January2017.
5. "On the binary quadratic Diophantine equation $y^2 \square 10x^2 \square 24$",International journal of multidisciplinary education and research,volume2,issue1,34-39,January2017.
6. "On the linear quadratic equation $y^2 \square 7x^2 \square 3^2$",International journal of advanced science and research,volume2,issue1,18-22,January 2017.

2018

1. Dr. M.A. Gopalan, Ms. J.Shanthi, Ms. D.Maheswari,Ms.T.Geetha, "Observation onBiquadraticDiophantineEquationswithIntegerSolutions$\mathbf{x^4+x^3y+x^2y^2+xy^3+y^4=z^2+xy}$" in ,ISBN: 978-93-87769-23-6, April2018

2019

1. S. Vidhyalakshmi, T. Mahalakshmi, J. Shanthi, M.A. Gopalan, " On Two InterestingSystems Of Diophantine Equations ",Journal Of Interdisciplinary Cycle Research,Volume11,Issue 11, Pages 692-695, November2019.

2020

1. J.Shanthi,T.Mahalakshmi,V.Anbuvalli,M.A.Gopalan,"OnFindingInteger SolutionsToTheHomogeneousCone $7x^2 - 5y^2 = 432z^2$ ",AEGAEUMJournal,

2. J.Shanthi,T.Mahalakshmi,N.Umamaheswari,M.A.Gopalan,"AStudyOnThe Hyperbola $y^2 = 11x^2 + 50$",AlochanaChakraJournal,VolumeIX,IssueIV,Pages

   3879-3895,April2020.

3. S. Vidhyalakshmi, J. Shanthi, T. Mahalakshmi, M.A. Gopalan, " A Classification Of Rectangles in Connection with Fascinating Number Patterns", International Journal ofScienceand Research Methodology, Volume15, Issue2, April 2020.
4. S. Vidhyalakshmi, J. Shanthi, T. Mahalakshmi, M.A. Gopalan, " A Classification ofRectanglesinConnectionwithTwoFascinatingNumberPatterns",InternationalJournal of AdvancedScienceand Technology, Volume29,Issue8s, 2020.

2021

1. 1. J.Shanthi,T.Mahalakshmi,S.Vidhyalakshmi,M.A.Gopalan,"AStudyOnThe PellLike Equation $5x^2 - 8y^2 = -48$ ", International Journal of All Research Education&ScientificMethods (IJARESM), Volume9, Issue4, April2021.

2. J.Shanthi, T. Mahalakshmi, S. Vidhyalakshmi, M.A. Gopalan," On The HomogeneousCone $z^2 = 14x^2 - y^2$", Turkish Journal of Physiotherapy and Rehabilitation,Volume32,No.3,April 2021.

2022

1. S. Vidhyalakshmi, J. Shanthi, M.A. Gopalan," On the non-homogeneous cubic diophantine equation with four unknowns $x^2+y^2+4\left(\left(2k^2-2k\right)^2z^2-4-w^2\right)=\left(2k^2-2k+1\right)xyz$ ", International Journal of Mathematics and Computing Techniques,(IJMCT), volume 4, Issue 3, June 2021.
2. S. Vidhyalakshmi, J. Shanthi, M.A. Gopalan," On Homogeneous Cubic equation with four unknowns $x^2-y^3=4\left(w^3-z^3\right)+6(x-y)^3$", International Journal of Engineering Technology Research and Management, (IJETRM), Volume 5, Issue 7, July 2021.
3. S. Vidhyalakshmi, J. Shanthi, M.A. Gopalan," On the Ternary Quadratic Diophantine equation ", International Journal of Research Publication and Reviews, (IJRPR), Volume 2, Issue 8, 2021.
4. S. Vidhyalakshmi, J. Shanthi, M.A. Gopalan," Study on the Hyperbola $9x^2-7y^2=8$", International Journal of Engineering Developed and Research , (IJEDR), Volume 9, Issue 2, May 2021.
5. J. Shanthi, M.A. Gopalan," A search on Non – distinct Integer solutions to cubic Diophantine equation with four unknowns $x^2-xy+y^2+4w^2=8z^3$", International Research Journal of Education and Technology,(IRJEDT), Volume 2, Issue 01, May 2021.

2023

1. J. Shanthi, M. Parkavi, On finding integer solutions to the homogeneous ternary quadratic Diophantine equation, International journal of Research Publication and Reviews, Volume 4, Issue 1, 2023.
2. J. Shanthi, B. Indhumuki, Obsevations on the hyperbola, International journal of Research Publication and Reviews, Volume 4, Issue 1, 2023.

2024

1. **J.Shanthi, Assistant Professor & Head, N.Thiruniraiselvi, Asst. Professor and Prof. M.A.Gopalan,**A Portrayal of integer solutions to Non-Homogeneous ternary cubic Diophantine equation $6\left(x^2+y^2\right)-11xy=2z^3$, Arhimede Mathematical Journal, Volume 11, No.2, Pp 158-167.Autumn 2024.
2. **J.Shanthi, Assistant Professor & Head and Prof. M.A.Gopalan,**Formulation of Special Pythagorean triangles through integer solutions of the hyperbola $y^2=\left(k^2+2k\right)x^2+1$, Indian journal of Science and Technology, 17(41), Pp 4307-4312, November 2024.

3. **J.Shanthi, Assistant Professor & Head and Prof. M.A.Gopalan** Techniques to solve Non-Homogeneous Quaternary Sextic Diophantine equation $x^3+y^3=7zw^5$, International Research Journal of Education and Technology, Volume: 06, Issue: 12, Pp 1858-1865, December 2024.
4. **T. Mahalakshi, J. Shanthi, " Obervation on the Non- homogeneous Binary Quadratic Diophantine Equation** 7
5. A Glimpse on Homogeneous Ternary Quadratic Diophantine equation, International Advanced Research Journal in Science, Engineering and Technology, Volume 11, Issue 9, Pp 96-101, September 2024.
6. A Search on integer solutions to Quintic equation with two unknowns $x^2-2xy^2=ky^5$, International Research journal of education and Technology, Volume 06, Issue 11, Pp 07-12, November 2024.
7. A search on integral solutions to the Non-Homogeneous Ternary Cubic equation $ax^2+by^2=(a+b)^3, a,b\succ 0$, International Journal of Advanced Research in Science , Communication and Technology, Volume 4, Issue 1, Pp 88-92, November 2024.
8. Formulation of Special Pythagorean triangles through integer solutions of the hyperbola $y^2=(k^2+2k)x^2+1$, Indian journal of Science and Technology, 17(41), Pp 4307-4312, November 2024.
9. J.Shanthi, Assistant Professor & Head, N.Thiruniraiselvi, Asst. Professor and Prof. M.A.Gopalan,"A Portrayal of integer solutions to Non-Homogeneous ternary cubic Diophantine equation $6(x^2+y^2)-11xy=2z^3$, Arhimede Mathematical Journal, Volume 11, No.2, Pp 158-167.Autumn 2024.
10. Techniques to solve Non-Homogeneous Quaternary Sextic Diophantine equation $x^3+y^3=7zw^5$, International Research Journal of Education and Technology, Volume: 06, Issue: 12, Pp 1858-1865, December 2024.
11. On the Positive Pell equation $y^2=3x^2+A^2+6A-3$, International Research Journal of Modernization in Engineering Technology and Science, Volume 06, Issue 10, Pp 3190-3197, October 2024.
12. On the Positive Pell equation $y^2=3x^2+\alpha^2+2\alpha-2$, International Research Journal of Education and Technology, Volume 06, Issue 10, Pp 331-339, October 2024.

BOOK PUBLISHED:

1. Dr.M.A.Gopalan,J.Shanthi, D.Maheswariand T.Geetha,**Biquadratic Diophatineequationwith integersolution**, ky-publishing,9789387769236.
2. S.Vidhyalakshmi,J.Shanthi,T.Mahalakshmi,M.A.Gopalan,**ACollection OfSequences Of Dio 3-Tuples**, RIP-publishing, 978-93-8911-6-49-6.

3. **J.Shanthi, S. Vidhyalakshmi, Asst. Prof., M.A. Gopalan, Prof.,** "Observation on the Biquadratic equation with three unknowns $x^2-4xy+11y^2=11z^4$", Global Edu-Conclave 2024, 5th September 2024, Volume 1, ISBN : 978-81-967563-2-1.
4. J.Shanthi, Assistant Professor & Head, N.Thiruniraiselvi, Asst. Professor and Prof.M.A.Gopalan,**"A Troupe of special second degree multivariable polynomial Diophantine equations with integers solutions"**, Deep Science publishing, January 2025, ISBN: 978-93-49307-60-5.
5. **Dr.J.Shanthi, Assistant Professor and Head, Dr.M.A. Gopalan, Professor** "A Collection of Special Binary and Ternary Quadratic Diophantine Equation with Integer Solutions and Properties", Deep Science Publishing , ISBN: 978-93-49307-87-2, February 2025.

BOOKCHAPTER:

- J. Shanthi, T. Mahalakshmi, M.A. Gopalan, **Construction of Sequences of Diophantine 3- Tuples through the Pair (9,2)**, AKINIK Publications, 978-93-90322-73-2.

CONFERRENCE:

1. **Dr.J.Shanthi, Asst. Pro.,** participated and presented a paper " On the Positive Pell equation $y^2=3x^2+\alpha^2+6\alpha-3$", in the One day International conference on "Emerging Trends in Mathematics and Physical Sciences", organized by PG & Research Department of Mathematics and Department of Physics , Shrimati Indira Gandhi College, Trichy on 24th September 2024.
2. **Dr.J.Shanthi, Asst. Pro.,** participated and presented a paper " On the Positive Pell equation $y^2=3x^2+\alpha^2+2\alpha-2$", in the One day International conference on "Emerging Trends in Mathematics and Physical Sciences", organized by PG & Research Department of Mathematics and Department of Physics , Shrimati Indira Gandhi College, Trichy on 24th September 2024.

Workshop:

1. **J. Shanthi, Assistant Professor and Head** has participated in a workshop titled " Vikaspedia – A Platform for Augmentation of Multilingual Digital Resources for Development: on 20.02.2025 at Shrimati Indira Gandhi College, Tiruchirappalli, Tamil Nadu.

Training Programme:

1. **Dr.J.Shanthi, Asst.Prof, and Head.,** participated In the one day training programme on " Women who advocate for Equity, Diversity and Inclusion", held on 21.03.2025 at Shrimati Indira Gandhi College, Tiruchirappalli.