CHAPTER 61

THESES OF THE PREVIOUS YEAR
(A List of Theses Accepted for Awarded of the
Degree of Ph.D. in 87th Annual Convocation-2010)

Doctoral Theses

MATHEMATICS

677.   ARORA (Ritu) NEE NARANG (Ritu)
        Various Aspects of Multi-Level Programming Problems.
        Supervisors : Dr. S R Arora and Prof. B K Dass
        Th 16923

Contents

1. Introduction. 2. Indenfinite quadratic bilevel programming problems. 3. Bilevel fractional programming problems. 4. Non-linear multi-level integer programming problems. References.

678.   GUPTA (Neenu)
        Regular and Chaotic Motions in Stellar Pulsations.
        Supervisor : Prof. L M Saha
        Th 16927

Contents

1. Introduction. 2. Regularity and chaos in stellar pulsation. 3. Application of dynamical system to study stellar pulsations. 4. On regular and chaotic evolutions in stellar oscillations. 5. Lyapunov exponent in stellar oscillations for regular and chaotic evolutions. 6. Lyapunov exponent in stellar variability for regularity and chaos. References.

679.   SINGH (Dhiraj Kumar)
        Om Sum Form Functional Equations in Information Theory.
        Supervisors : Prof. Prem Nath and Prof. B K Dass
        Th 16926

1. Introduction. 2. A multiplicative sum form functional equation. 3. Nonmultiplicative sum form functional. 4. Some sum form functional equations containing at most two unknown mapping. 5. A sum functional equation containing five unknown mappings. References.

680. SWARN SINGH
New Highly Accurate Discretization for the Solution and the Estimates of for Singularly Perturbed Non-Linear Multi-Dimensional Elliptic and Parabolic Partial Diffrential Equations.
Supervisor : Prof. R K Mohanty
Th 16924

Contents

1. Theoritacal background and difference methods for elliptic and parabolic partial differential equations. 2. Third order variable mesh arithmetic average discretization for the solution of singularly perturbed two point non-linear boundary value problems. 3. Arithmetic average discretization of $O(h^4)$ for singularly perturbed two-dimensional non-linear elliptic boundary value problems. 4. Arithmetic average discretization of $O(h^4)$ for three dimensional singularly perturbed non-linear elliptic partial differential equations. 5. Non-uniform mesh arithmetic average discretization for singularly perturbed one space dimensional non-linear parabolic initial boundary value problems. 6. A new two level implicit discretization of $O(k^2+kh^2+h^4)$ for singularly perturbed two space dimensional non-linear parabolic partial differential equations. 7. A new high order two-level implicit discretization for the solution of singularly perturbed three dimensional non-linear parabolic equations. 8. Conclusions and scope for future research work. Bibliography.

681. VANI
Study of Optimality and Duality in Vector Optimization Problems.
Supervisor : Prof. Surjeet Kaur Suneja
Th 16928

Contents

1. Introduction. 2. Optimality and duality in mulitobjective programming. 3. Vector optimization over cones : Optimality and duality. 4. Second order duality and monotonicity in vector optimization problem over cones. References.