Contents

Preface iv

Foreword v–vii

Members on the Advisory Board viii

List of Contributors ix

A Survey of Mock Theta Functions from the Combinatorial Point of View *A. K. Agarwal and G. Sood* 1–18

The Past and Future of a Markov Process given the Present at Time t as t Goes to Infinity *K. B. Athreya* 19–25

Bipartitions with 4-cores and Sextenary Quadratic Forms *Nayandeep Deka Baruah and Kuwali Das* 27–38

Short Geodesics on a Hyperbolic Surface *Ara Basmajian* 39–43

Relations between Word Length, Hyperbolic Length and Self-Intersection Number of Curves on Surfaces *Moira Chas* 45–75

Algorithmic Construction of Representations of a Finite Solvable Group *Ravindra S. Kulkarni* 77–96

Fractional Differential Operators for Special Functions of Matrix Argument *A. M. Mathai* 97–113

Signature Operators on Lipschitz Manifolds and Novikov's Theorem *Amiya Mukherjee* 115–132

Modular Relations for Remarkable Product of Theta-Functions and Evaluations *M. S. Mahadeva Naika, K. Sushan Bairy and N. P. Suman* 133–145

Soret Effect on MHD Convective Flow through a Porous Medium in a Vertical Channel with First Order Chemical Reaction and Thermal Radiation
Ramprakash Sharma, Abhay Kumar Jha and Pradip Kumar Gaur 147–162

Riemannian and Finsler Geometry in the Large *K. Shiohama* 163–179

Encounters with Ramanujan's Mathematics *Dinesh S. Thakur* 181–186

A Survey on Arithmetic Questions in the Representation Theory of Finite Groups *Steven H. Weintraub* 187–201