

A Study of Certain Mappings on Semirings



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**Submitted to GC university Lahore
Impartial fulfillment of the requirement
For the award of degree of**

Doctor of Philosophy

In

Mathematics

By

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DECLARATION

I, Mr. Malik Anjum Javed, registered No. 01-GCU-PhD-Math-04, student of PhD in the subject of Mathematics, hereby declare that the matter presented in this dissertation entitled "*A Study of Certain Mappings on Semirings*" is my own work and has not been submitted for PhD degree in any other University, Research institution etc. in Pakistan or abroad.

Dated: 10-11-14

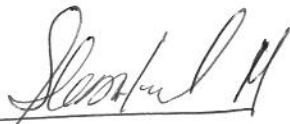


Signature of Deponent


RESEARCH COMPLETION CERTIFICATE.

Certified that research work contained in this thesis entitled "*A Study of Certain Mappings on Semirings*" has been carried out and completed by Mr. Malik Anjum Javed Registered No. 01-GCU-PhD-MATH-04 under my supervision

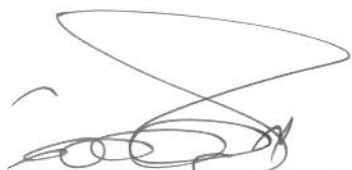
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Controller of Examinations
GC University Lahore.

DEDICATION

DEDICATED

TO MY

BELOVED PARENTS

AND

LATE SISTERS

ACKNOWLEDGEMENT

All praises are due to **Almighty Allah** alone the most beneficial and the most merciful, who make me able to complete my research. And Peace Be Upon His Holy Prophet "Muhammad" the most perfect and the best among of ever born on the surface of the earth.

It is difficult to overstate my deepest gratitude to my supervisor **Dr. Muhammad Aslam** for introducing me the subject of theory of semirings and suggesting the problem and teaching me the courses. His continuous help, worm encouragement, passionate inspiration, clear and simple explanations of the subject help me and become the main source for the completion of this work.

I feel a deep sense of gratitude to my mother and late father, for partially building my vision and teaching me real things about the life. The happy memory of my late father still provides inexhaustible inspiration source for my journey in this life. I would also extend my gratitude to my brothers **Tariq, Arshad, Amjad and Shahid**, for their encouragement and rendering me the sense and the values of brotherhood. I am very much grateful to my children **Jawaria, Zaid, Abaid and Junaid** for their love and innocence that encourages me to complete this task.

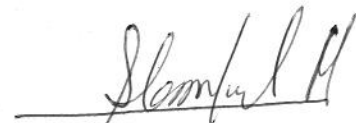
Lastly, I am very grateful to my wife, for her love and patience and moral support during this period of research.

Malik Anjum Javed

CERTIFICATE OF EXAMINERS

Certified that the quantum and quality of research work contained in this thesis, entitled "*A Study of Certain Mappings on Semirings*" is adequate for the award of the Degree of Doctor of Philosophy.

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List of papers Published/Accepted from this thesis.

- 1) M. A. Javed, M. Aslam and M. Hussain, *On Condition (A_2) of Bandlet and petrich for Inverse Semirings*, International Mathematical Forum, 7(2012), 2903-2914.
- 2) M. A. Javed and M. Aslam, *Commuting Mappings of Semiprime MA- Semirings* to appear in WASJ.
- 3) M. A. Javed, M. Aslam and K. P. Shum, *On Dependent Elements in MA-Semirings*, to appear in ARS Combinatoria.
- 4) M. A. Javed and M. Aslam, *Some Commutativity Conditions in Prime MA-Semirings*, ARS Combinatoria 114(2014), 373-384 .
- 5) M. A. Javed, M. Aslam and M. Hussain, *On derivations of Prime Γ -Semirings*, Southeast Asian Bulletin of Mathematics, 37 (2013), 859-865.
- 6) M. A. Javed and M. Aslam, *Generalized Commutators in MA-Semirings*, submitted.