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ثبكة المعلومات الجامعية





## جامعة عين شمس

التوثيق الالكتروني والميكروفيلم



نقسم بللله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأفلام قد اعدت دون آية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15-20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of 15-25c and relative humidity 20-40 %



ثبكة المعلومات الجامعية











#### SOME TOPOLOGICAL APPLICATIONS ON ROUGH SETS

#### A Thesis

Submitted to the Faculty of Science, Assiut University, in Partial Fulfillment of the requirement for the degree of master in science (Pure mathematics)

By

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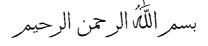
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\* الحمد لله رب العالمين، والصلاة والسلام على سيد المرسلين محمد بن عبد الله عليه أفضل الصلاة والتسليم \*

الرب أوزعني أن أشكر نعمتك التي أنعمت عليَّ

فوعلى والديُّ وأن أعمل صالحا لرضاه وأدخلني

برحمتك في عبادك الصالحين صدق الله العظيم

سورة النمل، آية (١٩)

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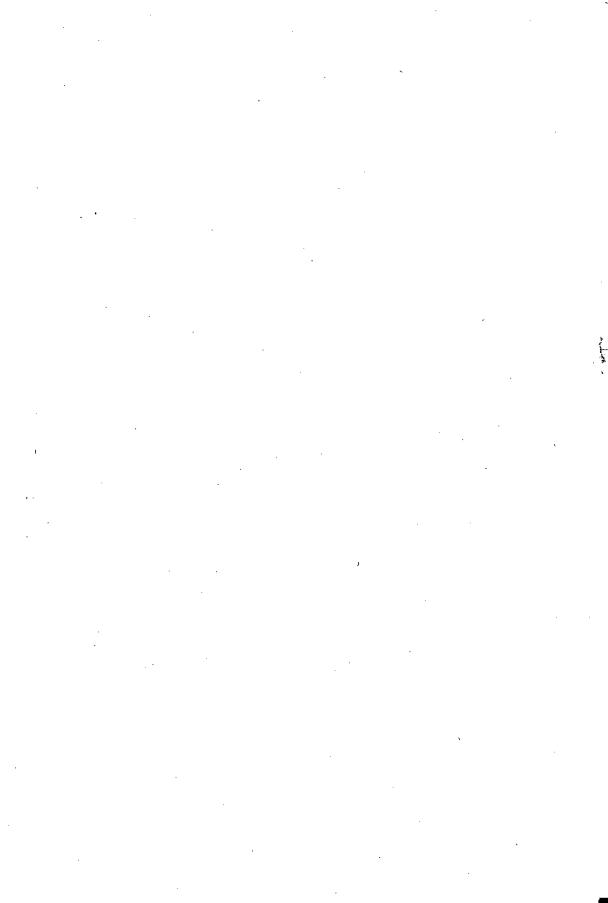
#### APPROVAL SHEET

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#### **PREFACE**

Topology and its branches have become hot topics, not only for almost all fields of mathematics but also for many areas of science such as chemistry [10], physics [8] and information systems [28].

In the last decade of 20th century, the revolution of information has become in the focus of interest. Topology has a significant place in this age; the age of information. The basic problem in this age is how to transform data to knowledge by using the available information.

Rough set theory is regarded as a formal framework for the automated transformation of data into knowledge. This theory was originated by Zdzisalw Pawlak in 1982 as a result of a long term program of fundamental research on logical properties of information systems carried out by him and a group of logicians from Polish Academy of Science and University of Warsaw, Poland.

The fundamental notions of rough set theory are approximation space and lower (upper) approximation. In the approximation space, the objects (patients for example) are classified into disjoint categories with respect to the available information (symptoms) such that the objects (patients) which have the same information (symptoms) belong to the same category. In this case the objects which belong to the same category are similar (indiscernible) in view of the available information