بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــســـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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بالرسالة صفحات

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

﴿رب أوزعنى أن أشكر نعمتك التى أنعمت علىَّ وعلى والدىَّ وأن أعمل صالحاً ترضاه وأدخلنى برحمتك فى عبادك الصالحين﴾

صدق الله العظيم

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Preface

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