

hossam maghraby



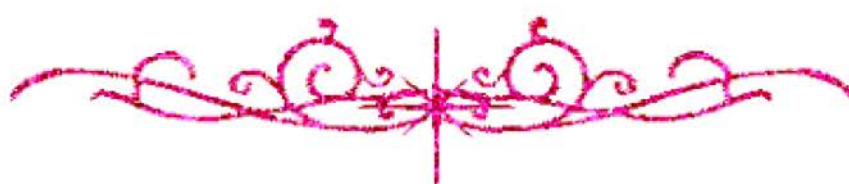
# بسم الله الرحمن الرحيم



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# شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



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# جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

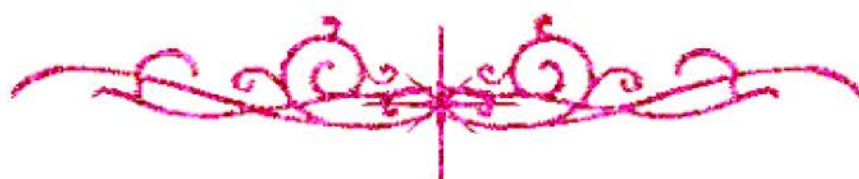
## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



## يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



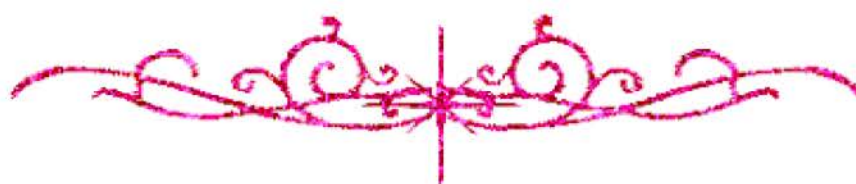
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شبكة المعلومات الجامعية



# بعض الوثائق الأصلية تالفة



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بالرسالة صفحات  
لم ترد بالأصل





B15194

**Approval Sheet**  
**STUDYING THE GEOENGINEERING HAZARDS USING**  
**REMOTE SENSING TECHNIQUES AND ITS APPLICATION ON**  
**EL-MOKATTAM AREA**

**Thesis**  
**Submitted in Partial Fulfilment for the**  
**Requirements of the M.Sc. Degree**  
**In Civil Engineering**

**By**  
**Salwa Farouk Khalil Elbeih**  
**B.Sc. Civil Engineering**

**Supervisors**

**Prof. Dr. Mona Moustafa Eid**  
**Professor of Geotechnical Engineering**  
**Faculty of Engineering-Ain Shams**  
**University**

**Prof. Dr. Ezzat Abdel-Fattah Omeira**  
**Professor of Geotechnical Engineering,**  
**Faculty of Engineering-Ain Shams**  
**University**

**Prof. Dr.El-Sayed Abbas Zaghloul,**  
**Professor of Geology**  
**National Authority for Remote Sensing**  
**and Space Sciences (NARSS)**

**2002**

1. The first part of the paper is devoted to a general discussion of the problem of the existence of a solution of the system of equations (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$ . It is shown that the system of equations (1) has a solution for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition

$$\alpha + \beta = 1 \quad (2)$$

is satisfied. The condition (2) is satisfied for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition

$$\alpha + \beta = 1 \quad (3)$$

$$\alpha + \beta = 1 \quad (4)$$

$$\alpha + \beta = 1 \quad (5)$$

$$\alpha + \beta = 1 \quad (6)$$

$$\alpha + \beta = 1 \quad (7)$$

$$\alpha + \beta = 1 \quad (8)$$

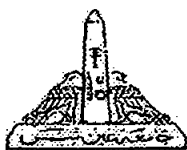
It is shown that the system of equations (1) has a solution for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition

$$\alpha + \beta = 1 \quad (9)$$

$$\alpha + \beta = 1 \quad (10)$$

$$\alpha + \beta = 1 \quad (11)$$

$$\alpha + \beta = 1 \quad (12)$$



Ain Shams University  
Faculty of Engineering  
Structural Engineering Department

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By

**Salwa Farouk Khalil Elbeih**

B.Sc. Civil Engineering-Hon. (1997)

Structural Engineering Department-Faculty of Engineering  
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### **Information About the Author**

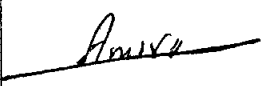
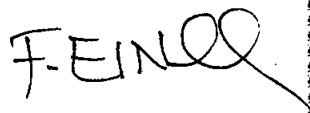
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**Qualifications:** B.Sc. Civil Engineering “Structural Engineering Department” Faculty of Engineering-Ain Shams University, Very Good with Hon. (1997).

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## Examining Committee

| Name and Affiliation                                                                                                                       | Signature                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
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| <b>2- Prof. Dr. Fathalla El-Nahhas</b><br>Professor of Geotechnical Engineering<br>Faculty of Engineering, Ain Shams University            |    |
| <b>3- Prof. Dr. Ezzat Abdel-Fattah Omeira</b><br>Professor of Geotechnical Engineering<br>Faculty of Engineering-Ain Shams University      |    |
| <b>4- Prof. Dr. El-Sayed Abbas Zaghloul</b><br>Professor of Geology<br>National Authority for Remote Sensing<br>and Space Sciences (NARSS) |  |

1. *Chlorophyll a* (Chl *a*)

## STATEMENT

This Dissertation is submitted to Ain Shams University for the degree of Master of Science in Civil Engineering "Structural Department".

The work presented in this thesis was carried out by the author in the Department of Structural Engineering, Ain Shams University, Cairo, Egypt from 1998 to 2002.

No part of this thesis has been submitted for a degree or a qualification in any institute or university.

**Date:** 29 / 6 / 2002

**Signature:** Salwa Elbeih

**Name:** Salwa Farouk Khalil Elbeih.

