AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING
IRRIGATION AND HYDRAULICS DEPARTMENT

EFFECT OF NEW RECLAMATION LAND ON THE GROUNDWATER POTENTIALITY

BY

OSAMA MOHAMMED AHMED GAAME
(B.So.in Civil Engineering, Alexandaria University)

A Thesis

Submitted in Partial Fulfillment
of the Requirments For the

Degree of
Master of Science
in Civil Engineering
(Irrigation & Hydraulics)

Supervised By

Prof. Dr. M. EL-NIAZI HAMMAD
Prof. of Irrigation and Hydraulic
and Vice-Dean of the Faculty of
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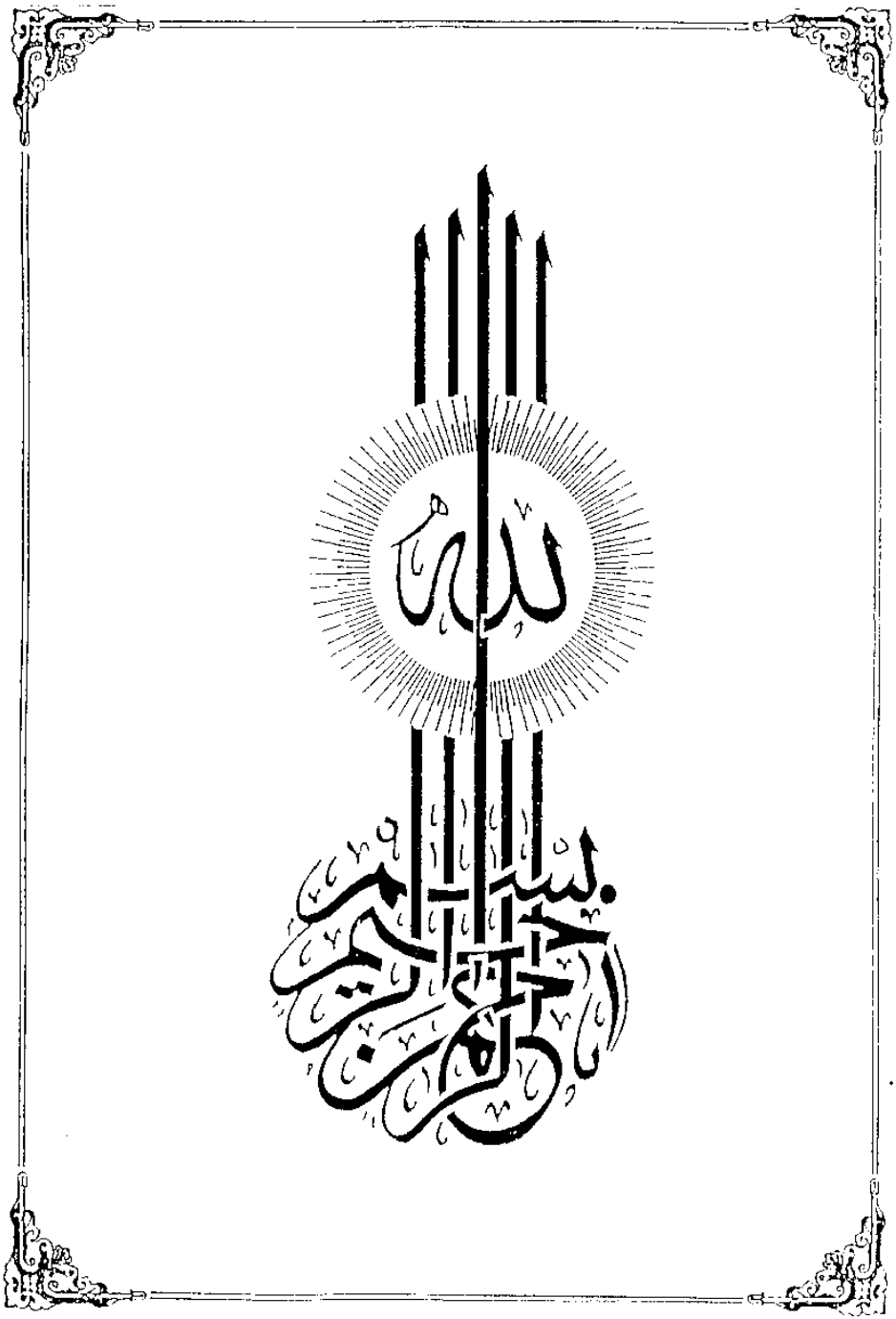

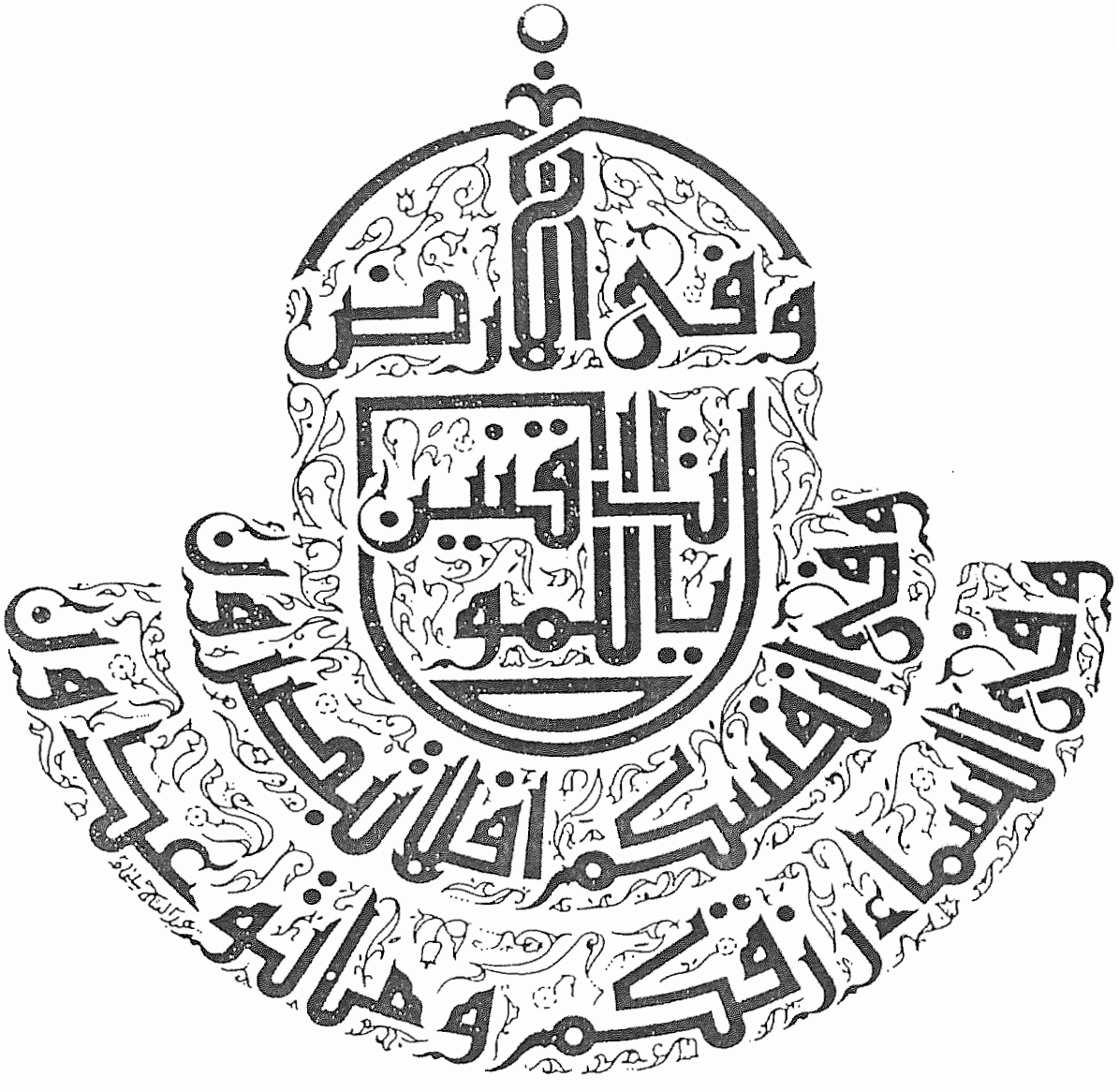

DEDICATION :

TO MY MOTHER

Examiners Committee

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CHAPTER V

IMPACT OF DEVLOPMENT ON THE HYDROGEOLOGICAL BALANCE

STATEMENT

This dissertation is submitted to Ain Shams University for the degree of Master of Science in Civil Engineering.

The work included in this thesis was carried out by the author in the department of Irrigation & Hydraulics, Ain Shams University, from to March, 1994.

No part of this thesis has been submitted for a degree or a qualification at any other University or Institution.

Date:

Signature:

Name: Osama Mohammed Ahmed Gaame

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Ain Shams University
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Abstract of the M.Sc. Thesis Submitted by:

Eng: Osama Mohammed Ahmed Gaame

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Effect of New Reclamation Land on the Groundwater Potentiality

Supervisors: Prof: Dr. M.EL-NIAZI HAMMAD
Dr. M. M. NOUR EL-DIN
Dr. FATMA ABDEL-RAHMAN ATTIA
Dr. AHMED A. A. HASSAN

Registration Date: Examination Date:

ABSTRACT

The study carried out on El-Tina plain, north-west of Sinai, aimed at predicting the impact of development activities on the hydrogeological balance of the area. The study was carried out in various steps, starting by defining the hydrogeology of the area and ending by predicting seepage estimation by various methods and water balances. Estimation of seepage is determined with the help of analytical, graphical and numerical methods. Results obtained from the numerical methods tend to be more accurate due to the consideration of complexity and stratification of the aquifer. Due to the higher water stages in the canal results in additional recharge to the aquifer, seepage from groundwater to the canal are almost nil. This will result in additional groundwater flow to the north helping retraining the salt-water fresh-water interface. The leaching of the soil during the first few years of operation would add more percolation to the aquifer. After returning to normal water application rates, all the flow components stabilize. In General, it can be concluded that if the drains are operational conditions after full agriculture development of the area will be more favorable than the present conditions.

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INTRODUCTION