

CONTENTS

Subject	Page No.
Chapter One:	
Introduction	1
Aim of work	6
Previous work	7
Chapter Two:	
Material And Methods	14
1- Sediment analysis:	14
Sampling program	14
Area under investigation	14
Collection of the sediment samples	14
Preparation of the sample	18
A-Grain size analysis:	19
a- Sieving technique	19
b- Pipette analysis	19
B-Chemical analysis:	19
a- Organic matter	19
b- Carbonate	20
2-Mollusca shells:	20
A- Identification	20
B- Heavy metals	20
C- Sodium and Potassium	21
D- X- ray diffraction	21
3-Physical and chemical parameters of water	21
A-Water temperature	21
B- Electrical conductivity	21
C- Hydrogen ion concentration	22
D- Water salinity	22

Subject	Page No.
Chapter Three:	
Hydrographical Studies	23
A- Physical Parameters	23
a- Water temperature	23
b- Electrical conductivity	26
B- Chemical Parameters	29
a- Hydrogen ion concentration	29
b- Water salinity	32
c- The depth of water	35
 Chapter Four:	
Grain size analysis:	42
Introduction	42
Graphical presentation of grain size	43
Sediment types distribution	62
Statistical parameters	66
Mean size	66
Sorting	77
Skewness	78
Kurtosis	80
The relationships between Grain size parameters	84
C-M pattern application	95
Discriminant function	101
Discussion	105
 Chapter five:	
Identification of mollusca:	109
Introduction	109
Separation of shells	113
List of recorded species	113

Subject	Page No.
Distribution of carbonate skeletal of both pelecypoda and gastropod in the Bardawil Lagoon	119
Total weight percent of mollusca contents	130
Correlation of total weight percent of mollusca and other parameters	132
Chapter six:	
Mineralogical studies of mollusca shells:	137
Introduction	137
Result and discussion	137
Correlation of mineral composition and other environmental parameters	141
Chapter seven:	
Geochemistry:	157
Introduction	157
Organic matter	158
Carbonates	165
Correlation between organic matter, carbonates and other environmental parameters	170
The Distribution of some metals in mollusca shells	172
Sodium	172
Potassium	174
Heavy metals	179
Iron	179
Copper	182
Manganese	183
Zinc	184
Correlation of metals in shells and other parameters	187
Summary and conclusion	192
References	199
Arabic Summary	210