

CONTENTS

Page

SYNOPSIS

SECTION I

CHAPTER I

INTRODUCTION TO SOLITARY AND CNOIDAL WAVES

- | | |
|--------------------|----|
| 1. Introduction | 1 |
| 2. Basic equations | 22 |

CHAPTER II

SOLITARY WAVES AT THE INTERFACE OF TWO NON-UNIFORM STREAMS IN A CHANNEL OF ARBITRARY CROSS SECTION

- | | |
|------------------------|----|
| 1. Introduction | 26 |
| 2. Formulation | 26 |
| 3. Analysis | 30 |
| 4. Irrotational case | 47 |
| 5. Rectangular channel | 48 |
| 6. Conclusions | 50 |

CHAPTER III

SOLITARY WAVES IN A BAROTROPIC FLUID IN AN OPEN CHANNEL OF ARBITRARY CROSS SECTION

- | | |
|------------------------|----|
| 1. Introduction | 52 |
| 2. Formulation | 52 |
| 3. Analysis | 55 |
| 4. Rectangular channel | 67 |
| 5. Conclusions | 69 |

(Contd.)

CHAPTER IV

IRROTATIONAL SOLITARY WAVES IN A
GAS-LIQUID SYSTEM

1. Introduction	71
2. Formulation	71
3. Analysis	75
4. Two-liquid system	94
5. Rectangular channel	96
6. Conclusions	98

SECTION II

CHAPTER V

CNOIDAL WAVES IN A COMPRESSIBLE FLUID
IN A TOROIDAL CHANNEL

1. Introduction	100
2. Formulation	101
3. Analysis	103
4. Straight channel	121
5. Rectangular channel	124
6. Conclusions	126

CHAPTER VI

INTERFACIAL CNOIDAL WAVES IN A TOROIDAL
CHANNEL OF ARBITRARY CROSS SECTION

1. Introduction	128
2. Formulation	128

(Contd.)

	Page
3. Analysis	132
4. Straight channel	150
5. Rectangular channel	153
6. Conclusions	155

REFERENCES