## CONTENTS

<table>
<thead>
<tr>
<th>ACKNOWLEDGEMENT</th>
<th>(i)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF PUBLICATIONS</td>
<td>(ii,iii)</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>(iv-vii)</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>(viii-xi)</td>
</tr>
</tbody>
</table>

**CHAPTER - I**

(INTRODUCTION)

REFERENCES 27

**CHAPTER - II**

(SYNTHESIS, ION EXCHANGE BEHAVIOUR AND STABILITY OF A CRYSTALLINE ANTIMONY(V) SILICATE CATION EXCHANGER)

EXPERIMENTAL 39

DISCUSSION 63

REFERENCES 68

**CHAPTER - III**

(ION EXCHANGE KINETICS OF SOME DIVALENT METAL IONS ON ANTIMONY(V) SILICATE AND ANTIMONIC ACID CATION EXCHANGERS)

EXPERIMENTAL 72

DISCUSSION 82

REFERENCES 103
CHAPTER - IV

(THERMODYNAMICS OF Mg(II), Ca(II), Sr(II) AND Ba(II) EXCHANGES ON ANTIMONY(V) SILICATE CATION EXCHANGER)

EXPERIMENTAL 106
DISCUSSION 110
REFERENCES 141

CHAPTER - V

(DISTRIBUTION AND SEPARATION STUDIES OF SOME METAL IONS ON ANTIMONY(V) SILICATE CATION EXCHANGER)

EXPERIMENTAL 144
DISCUSSION 156
REFERENCES 158

CHAPTER - VI

(A SELECTIVE AND SENSITIVE SPOT TEST METHOD FOR THE DETECTION OF IRON(III) AND MOLYBDENUM(VI) ON ANTIMONY(V) SILICATE BEADS)

EXPERIMENTAL 160
DISCUSSION 162
REFERENCES 164