# CONTENTS

**CHAPTER I**  
**INTRODUCTION**  
1.1 Definitions & Preliminaries  
1.2 Background of the work  
1.3 Gist of the thesis  

**CHAPTER II**  
**CONVEX SIMPLE GRAPHS AND INTERVAL MONOTONICITY**  
2.1 Distance convex simple graphs and totally non interval monotone graphs  
2.2 Minimal path convexity and m-convex simple graphs  
2.3 Iteration number  

**CHAPTER III**  
**CONVEX SIMPLE GRAPHS AND SOLVABILITY**  
3.1 Solvable trees  
3.2 Center of distance convex simple graph  
3.3 Convexity properties of product of graphs  

**CHAPTER IV**  
**CONVEXITY FOR THE EDGE SET OF A GRAPH**  
4.1 Cyclic convexity  
4.2 Convex invariants  
4.3 Pasch-Peano properties
<table>
<thead>
<tr>
<th>CHAPTER V</th>
<th>SOME PROPERTIES OF H-CONVEXITY ON $\mathbb{R}^n$</th>
<th>110</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>H-Convexity</td>
<td>110</td>
</tr>
<tr>
<td>5.2</td>
<td>A Problem of Van de Vel</td>
<td>115</td>
</tr>
<tr>
<td>5.3</td>
<td>Concluding remarks and suggestions for further study</td>
<td>126</td>
</tr>
</tbody>
</table>

**APPENDIX**

- LIST OF SYMBOLS | 131 |
- REFERENCES | 132 |