Contents

Chapter 1 INTRODUCTION 1-35

1.1 Background : Cardiovascular System
   A. Blood : A Marvellous Fluid
   B. Heart : A Double Pump
   C. Blood Vessels : A Network of Tubes

1.2 Arterial Stenosis
   A. Formation
   B. Development
   C. Problems

1.3 Literature Survey
   A. Newtonian Fluid Models
   B. Casson Fluid Models
   C. Power-law Fluid Models
   D. Bingham Plastic Models
   E. Velocity Slip Condition
   F. Viscosity of Blood

1.4 Present Work
1.5 List of Communications

Chapter 2 NEWTONIAN FLUID MODEL OF AN ARTERIAL STENOSIS WITH WALL SLIP 36-69

2.1 Introduction
2.2 Basic Equations of the Flow
2.3 Formulation of the Problem
2.4 Solution
2.5 Results and Discussions
2.6 Conclusion
2.7 Figures 2.1-2.8
Chapter 3  TWO-LAYERED NEWTONIAN FLUID MODEL OF AN ARTERIAL STENOSIS WITH SLIP  70-103

3.1 Introduction
3.2 Formulation of the Problem
3.3 Solution
3.4 Results and Discussions
3.5 Conclusion
3.6 Figures 3.1-3.8

Chapter 4  CASSON FLUID MODEL OF AN ARTERIAL STENOSIS WITH WALL SLIP  104-139

4.1 Introduction
4.2 Formulation of the Problem
4.3 Solution
4.4 Results and Discussions
4.5 Conclusion
4.6 Figures 4.1-4.8

Chapter 5  TWO-LAYERED CASSON FLUID MODEL OF AN ARTERIAL STENOSIS WITH SLIP  140-175

5.1 Introduction
5.2 Formulation of the Problem
5.3 Solution
5.4 Results and Discussions
5.5 Conclusion
5.6 Figures 5.1-5.8

Chapter 6  POWER-LAW FLUID MODEL OF AN ARTERIAL STENOSIS WITH WALL SLIP  176-209

6.1 Introduction
6.2 Formulation of the Problem
6.3 Solution
6.4 Results and Discussions
6.5 Conclusion
6.6 Figures 6.1-6.8
<table>
<thead>
<tr>
<th>Chapter 7</th>
<th>TWO-LAYERED POWER-LAW FLUID MODEL OF AN ARTERIAL STENOSIS WITH SLIP</th>
<th>210-242</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.1 Introduction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.2 Formulation of the Problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.3 Solution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.4 Results and Discussions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.5 Conclusion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.6 Figures 7.1-7.8</td>
<td></td>
</tr>
<tr>
<td>Chapter 8</td>
<td>BINGHAM PLASTIC MODEL OF AN ARTERIAL STENOSIS WITH WALL SLIP</td>
<td>243-278</td>
</tr>
<tr>
<td></td>
<td>8.1 Introduction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.2 Formulation of the Problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.3 Solution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.4 Results and Discussions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.5 Conclusion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.6 Figures 8.1-8.8</td>
<td></td>
</tr>
<tr>
<td>Chapter 9</td>
<td>TWO-LAYERED BINGHAM PLASTIC MODEL OF AN ARTERIAL STENOSIS WITH SLIP</td>
<td>279-310</td>
</tr>
<tr>
<td></td>
<td>9.1 Introduction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.2 Formulation of the Problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.3 Solution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.4 Results and Discussions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.5 Conclusion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.6 Figures 9.1-9.8</td>
<td></td>
</tr>
</tbody>
</table>

REFERENCES | 311-321 |

SUMMARY | 322-342 |