Chapter 7

Conclusion

We believe that this thesis has made a substantial contribution to the introduction of the new concept “Trimagic Labeling of Graphs” and exploring the existence and labeling schemes. There are four main chapters of original contributions in this thesis. In chapter 3, we introduced the new concept “Trimagic Labeling” of graphs and proved that several graphs are edge trimagic total and super edge trimagic total with suitable examples. In chapter 4, we introduced the new variations of trimagic labeling called a-Vertex consecutive edge trimagic total labeling of graphs and proved that several graphs satisfies this labeling. In chapter 5, we focused on Edge trimagic total labeling and super edge trimagic total labeling of disconnected graphs and presented some results on this with examples. In chapter 6, we completely focused on directed graphs. Here we have introduced the new concept (1, 1) indegree vertex trimagic labeling and (1, 1) outdegree vertex trimagic labeling and proved that some digraphs including the directed full binary are (1, 1) indegree vertex trimagic and (1, 1) outdegree vertex trimagic.

In this thesis edge trimagic total labeling and super edge trimagic total labeling of many standard graphs like generalized Petersen graph, generalized Prism, generalized Web graph and other cycle related graphs, corona graphs, ladder family and directed full binary tree are proved in various sections.
We would like to mention few open problems to the researchers,

• Find the trimagic bounds for each trimagic graphs.
• Prove that the generalised Anti-Prism is a trimagic graph.
• Prove that the Mobius Ladder is a trimagic graph.
• Can we connect the trimagic concept to the secret sharing scheme?
• Find the applications of trimagic labeling of graphs.

More generally we have the following research direction.

• Investigate the properties of edge trimagic total labeling of graphs.
• Introduce and investigate the existence of vertex trimagic total labeling of graphs.