CONCLUSION

Semigraphs are a kind of generalization of graphs. In this thesis, we obtained the adjacency of some semigraphs and their energy. The first two chapters are introductory chapters in which we include all basic concepts of the graph and semigraph theory.

In the third chapter, we introduced three new matrices which represent signed semigraph uniquely. Also, we studied necessary and sufficient conditions for a matrix to be signed semigraph.

In the fourth chapter, we defined the distance matrix and minimum covering distance matrix and find their energies for a semigraph of diameter 2. Upper and lower bounds for both the matrix energy are calculated. Some other bounds in terms of the greatest eigenvalue for both matrices are also developed.

In the fifth chapter, we propose the definition of color matrix and energy of semigraph. And computed some bounds for color energy in different ways.

In the sixth chapter, we introduced the minimum covering matrix for a semigraph and evaluate its energy. Upper and lower bounds are obtained. Also, we studied relations between minimum covering energy and energy of semigraph. In this chapter, we also study the minimum covering color matrix and energy of a semigraph and its properties.

As it is evident from recent literature many graph-based methods have been proposed in the last decade to obtain graph energy in chemical graph theory. Thus, similar kinds of studies i.e. the study of the energy of chemicals in semigraph models may be expected to bring significant results in near future.

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