CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 OUTCOME OF THIS RESEARCH WORK

In the preceding chapters, a detailed research study carried out on a CF and FCF problems with the objectives of minimizing the EE and maximizing GE are reported. Three different approaches namely GDA, AIS and SFHA have been successfully implemented for solving CF and FCF problems. They are applied to the eighty eight data sets, which are found in the literature and the results are compared with other algorithms in terms of exceptional elements and grouping efficacy. The summary of major contributions made through this research work is given below.

- The results obtained from GDA are superior for 25% of the cases, identical for 65% of cases and inferior for 10% of cases when compared with other well-known methods in CF problems.

- In FCF problems, the results show that the proposed GDA is almost superior in 50% of solutions and identical for 25% of solutions when it is compared with solutions obtained from existing approaches. Meanwhile very few problems are inferior to existing approaches.

- Proposed GDA is more efficient in computational time than metaheuristic approach for CF and FCF problems.
- The results obtained by AIS are compared with the various methods found in the literature. 25% of problems are superior to existing approach and 65% problems are equal in result.
- Almost 90% problems yield either better or equal solutions than existing approach in SFHA.
- GDA, AIS and SFHA proposed in this research are very much suitable for solving the CF and FCF problems with MPIM as input data.
- The results indicate that SFHA is better than GDA and AIS.

7.2 LIMITATIONS

There are some limitations of this research work.
- Multi objectives are not possible in the proposed GDA, since the solution obtained by percentage of similarity.
- For AIS, the quality of results depends mainly on the appropriate selection of size of the initial population and receptor editing percentage.

7.3 SCOPE FOR FUTURE RESEARCH

- The other evolutionary techniques can be modified for CF and FCF. Some of the issues like additional constraints, multi-objectives etc. can be implemented in AIS and SFHA.
- In SFHA, computational time can be minimized and different objectives with large size problems can be solved.
- For FCF, the problem can be considered including the processing time of the machines and part demand. FCF with more than one remainder cell can be tested.