Summary and Conclusion

Batch arrival retrial queueing models with negative customers and multistages of service accommodating starting failure, feedback, preemptive priority, vacation, admission control, impatient customers and orbital search are considered in the thesis.

Batch arrival retrial G-queue with multistage and multi-optional services, starting failure and feedback is analysed in Chapter 2. In Chapter 3, batch arrival retrial G-queue with multistage and multi-optional services, priority and collision is discussed. Chapter 4 is devoted to study bulk arrival retrial G-queue with multistage and multi-optional services, admission control, feedback and vacation. Single server batch arrival retrial G-queue with multistage and multi-optional services, active breakdown, delayed repair and orbital search is considered in Chapter 5. Chapter 6 deals with non-persistent batch arrival retrial G-queue with multistage and multi-optional services, vacation and orbital search. Batch arrival retrial G-queue with multistage and multi-optional services, feedback, randomized J vacation and orbital search is presented in Chapter 7.

The models considered are investigated using supplementary variable technique to obtain performance measures and reliability indices of interest. Stochastic decomposition law is verified and special cases are discussed. Numerical analysis are carried out to analyse the effect of parameters on the system performance. Practical Justifications to the proposed models are presented.

Future Work

On the basis of the findings of this research, the following suggestions for further studies can be carried out on various queueing instances.

- Busy period distribution may be derived for all the models.
- The models may be analysed in fuzzy environment.
- Cost analysis can be done to study the managerial aspects of the proposed models.