Conclusion
CONCLUSION

The above thesis entitled “A Parametric Study on queues in a Fuzzy Environment” is the consolidation of different notions that enrich the realm of queuing problem where the environment is fuzzy. More particularly the thesis contemplates interlaced methods pertaining to the fuzzy queuing problems. We have chosen trapezoidal fuzzy numbers to depict the vagueness governing fuzzy queuing problems.

In queuing problems with a fuzzy environment, Zadeh’s extension principle and $\alpha$-cut approach are widely used to derive the membership function of the performance measures of various queuing problems. Little’s formulae are widely used to define the inter relationship of characteristics of queuing problems.

Queuing models with multiple servers and batch arrivals are more useful in modelling many real-life situations. A pair of parametric NLP is used to define the performance measure of the queuing systems.

In most of the earlier concepts the batch size is treated as a random variable but it is a more accurate practice to use that the batch size is also fuzzy because it deserves the complete fuzziness. A pair of MINLP is used to discuss the performance measures of bulk arrival queuing model.

Batch arrival queuing models with a server set up time are widely used in practical situations before starting the service. The performance measure of
various system characteristics is discussed. Yager ranking index method is used to analyze results using fuzzy theory and conventional method.

It is difficult to get closed-form membership function of queuing characteristic if it involves more fuzzy numbers and hence MATLAB® 7.0.4 is used to avoid computational burden.

Batch arrival queuing system with server vacations is useful for the system in which the server wants to utilize its idle time for different purposes. Its characteristics are discussed for single and multiple vacations.

In real life, the parameters of the queuing models are always uncertain. But the parameters of the existing models in crisp are certain. Thus the results in aforementioned models are more apt and suitable than those of crisp models.