SUMMARY AND CONCLUSION

This thesis is devoted to the study of Quality Control Measures and contributions to Acceptance Sampling Plans. Also this thesis is focused on Mixed Sampling Plans, Multi Dimensional Mixed Sampling plans and Single Sampling Plans for variable process defectives.

- Mixed Sampling Plans are two stage sampling Inspection plans in which the first stage is concerned with variable criteria and the second stage sample is concerned with attribute criteria. If the lot is not accepted in the first stage, the lot is not rejected immediately, but the second stage sample is sought to discriminate the lot. It is found that these Sampling Plans gives more protection to the producer while retaining the same amount of protection to the consumer.

- This Research study presents the derivation of operating characteristics and associated performance measures of newly proposed mixed sampling plans for costly or destructive items. It leads to small sample size and hence economic is achieved. The first stage is considered with single sampling inspection due to variable criteria and the second stage is concerned with modified chain sampling as attribute inspection. The resulting sampling plans yields small sample sizes. Tables are constructed to facilitate easy selection of mixed plans. The comparative values of ASN clearly indicate the economic reduction in the sample size in the proposed mixed plans.
In industries, if different sampling plans are used for various quality characteristics, it would result in loss of Economy, Time and Labor. Therefore Multidimensional Plans are designed to control overall quality of a lot or process, which will offset the disadvantages.

In this thesis, Multidimensional Mixed Sampling Plans with Variance Criterion are also developed because in many occasions, measure of dispersion Criterion is used instead of Central tendencies.

It is observed that the MDBSSP requires a constant sample size. The MDBSSP safeguards the producer’s interest against rejecting good quality lots compared to PSSP and SSP.

The Chain Sampling Plans developed by many authors are only of partial Chaining. i.e, it will chain only the past lots to decide about the current lot or it may defer the decision until few sample results are obtained. But, the literature is scarce in development of two sided chain sampling plans. Hence, in this research study, Two-Sided Complete Chain Sampling Plan is developed considering the results of past as well as future lots if the current lot has exactly a defective unit. The comparison between the two sided complete chain sampling plans and ordinary chain sampling plans reveals that in complete chain sampling plans, the probability of acceptance of the lot decreases rapidly when the quality deteriorate. This ensures protection for the consumer. Moreover, it is found that when \( i=j \), the complete chain sampling plans reduces to Ordinary chain Sampling plan with index \( 2i \).

The procedure outlined in the last chapter gives the single sampling plans for variable process non conformities. Tables are constructed to facilitate easy selection.
of attribute single sampling plans. The new operating characteristic curve of the plan shows the ability of the plan to distinguish between good and bad lots during the process fraction defective is not a constant.

- It is found that Attribute Single Sampling Plans for variable process defectives converges to ordinary Single Sampling Plans for attributes at unit time.

**SCOPE FOR FURTHER RESEARCH / STUDY**

- Using Variable fraction defective one can develop the new attribute sampling plans.
- Further one can easily investigate the effect of inspection error based on new sampling plans.
- New probability distribution can be derived by using the variable process defective $p(t)$. 