

SUMMARY

In this thesis the distributional properties of generalized order statistics given by Kamps (1995) has been obtained for the Rayleigh distribution.

At the start a comprehensive review of the ordered random variables has been made, that starts from the simple order statistics and navigate through the record and generalized order statistics. The methodology of obtaining the probability distribution of these statistics has been given. Use of the ordered random variables, in real life, has been discussed. A brief review of literature has been given.

In chapter 3 of the thesis, the distribution of generalized order statistics for Rayleigh distribution has been obtained for $m = -1$ and for $m \neq -1$. The simple and negative moments of the resulting distributions have been obtained. It is found that the negative moments of the generalized order statistics of Rayleigh Distribution for $m = -1$ are same as the simple moments of record statistics for Inverse Rayleigh Distribution. Variance of the derived distributions has been obtained.

Chapter 4 of the thesis relates to the recurrence relations for moments of Generalized Order Statistics. The recurrence relations have been obtained for both the distributions. Estimation of the parameters of the Rayleigh distribution has been obtained by using the moment method in the distribution of generalized order statistics.