# CHAPTER 6

## CONCLUDING REMARKS

The extra information given by the third and fourth moments of the random variable under consideration would yield better approximation of the distribution of random variable as compared with the normal approximation which uses only the first and second moments of the random variable. The more satisfactory approximation of the distribution helps us to obtain better confidence interval and better test as was shown in Chapters 2 and 3.

In using the method based on hypothesis testing for constructing confidence interval in the presence of nuisance parameters, we have made use of the value of the parameter vector which "corresponds" to the value (under the null hypothesis) of the function of parameters of interest and is "nearest" to the estimated parameter vector. The choice of this value of the parameter vector has "implicitly" created an approximately orthogonal system of coordinates which include the function of parameters of interest as one of the coordinates. The approximately orthogonal system of coordinates helps us to obtain confidence interval with the required coverage probability and satisfactory expected length.