1. INTRODUCTION

Geometric function theory (GFT) is a sub-branch of complex analysis. The Study of GFT involves finding the relationship between the analytical properties of the function of complex variable $f(z)$, and the geometrical properties of the image domain $D = f(U)$ where $U$ is the unit disc. We attempt to investigate some geometrical aspects of Univalent and Multivalent functions. We will obtain some nice results of coefficients estimates, convolution property, growth and distortion bounds, extreme points, criterion for univalency, p-valency and extremal functions for these classes. The study will continue the investigation of several properties of analytic and univalent functions and the different subclasses like, starlike, convex, close-to-convex, uniformly starlike and convex, parabolic starlike and convex etc. Application of fractional derivate operator, fractional integral operator, and hypergeometric functions to different subclasses of polylogarithm and univalent and multivalent functions is also of interest to us. The study of differential subordinations and criteria for univalency and its applications to various subclasses of univalent and multivalent functions is also under consideration. Using GFT and utilizing the theory of complex analysis we will try to find the connections with other branches of mathematics and applications in science and engineering. In this venture we will define several subclasses of univalent and multivalent functions with multiple properties.

Geometric functions theory is quite old and has become one of the most outstanding branches of complex analysis. This study involves finding the relationship between the analytical properties of $f(z)$ and the geometrical properties of the image domain $D = f(U)$ where $U$ is the unit disc. Attempts to solve the numerous conjectures in geometric functions theory have resulted in enriching the classical geometric function theory in several directions. Geometric function theory primarily comprises of Univalent and Multivalent functions and plays a central role in the development of complex
analysis. We aim at investigating some geometrical aspects of Univalent and Multivalent functions.

The theory of conformal mappings is intimately connected with the theory of boundary value problems for harmonic functions. Hence GFT has many applications in mathematical physics. The need also arises for good numerical methods for construction of conformal maps. However, this interplay works only in two-dimensions. In three-dimensions due to the classical theory of Liouville, there are only few and trivial conformal mappings. In higher dimensions the powerful tool of conformal mapping fails. GFT has and continues to have a profound impact on other branches of Mathematics like:

1. Complex analysis
2. Harmonic analysis
3. Functional analysis
4. Algebra
5. Partial differential equations
6. Dynamics
7. Geometry
8. Topology
9. Global analysis

There are many conjectures in Mathematics which have been solved by the use of Geometric functions theory, for instance the, “Bieberbach Conjecture”. This conjecture has been solved for some values of n and for all values of n for certain subclasses of univalent functions, but the full conjecture still remains open.