

ABSTRACT

This thesis provides an exposition of the structure of generalized metric space (g.m.s.) and its utility in fixed point theory and analysis. Much emphasis is given on the topological structure of g.m.s.

Chapter 1 includes some necessary preliminaries related to fixed point theory that will be needed in sequel subsequently. In this connection, some topological concepts are also included.

In Chapter 2, we study g.m.s. introduced by Alberto Branciari [4]. Further, the topological aspects of g.m.s. are studied in detail. We extend the structure of Hausdorff metric space to Hausdorff generalized metric space.

In Chapter 3, we establish some fixed point theorems in the setting of g.m.s. In this connection we are able to generalize some well established fixed point theorems.

In Chapter 4, we prove some fixed point theorems of multi-valued mappings under the structure of Hausdorff generalized metric spaces.