

**FIXED POINT THEOREMS AND COMMON FIXED POINT
THEOREMS IN B-METRIC SPACE WITH GRAPH**

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Abstract: In this paper, we investigate common fixed point theorems for a pair of self-mappings defined on a complete (b)-metric space endowed with a directed graph structure. By employing the notion of a strong comparison function together with graph-based (A)-type contractive conditions, we establish new sufficient conditions ensuring the existence and uniqueness of a common fixed point. The obtained results extend, generalize, and unify several existing fixed point theorems in the literature, including those of M. Ozturk and E. Girgin [6], as well as related results in metric and graph-endowed spaces. Illustrative examples are presented to demonstrate the applicability and effectiveness of the established theorems.

Keywords and Phrases: Common fixed point, b-metric space, directed graph, A-type contraction.

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