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COMMON FIXED POINT THEOREM FOR SIX MAPPINGS

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Abstract: In this paper we shall obtain a common fixed point of six mappings in a metric space which extend the results proved in {[10], [11], [24]}.

Keywords and Phrases: Compatible mappings, weakly compitable mappings, EA property, CLR property, common fixed point.

2020 Mathematics Subject Classification: 47H09, 47H10, 54H25.

1. Introduction and Preliminaries

During the last three decades research workers have devoted their much time to generalise the Banach contraction theorem in various ways. They have obtained common fixed point of two mappings using commutative property. The notion of commutativity has been weakend in terms of weakly commutative, compatibity, weak compatibity etc. . A number of common fixed point theorems have been obtained using compatibity, weak compatibity etc. We shall quote some definitions and theorems from the literature to complete our paper. Let f and g be selfmaps on the metric space (X, d). If $fx = gx = p$ for some $x \in X$, then x is called a coincidence point [9] of f and g and p is called a point of coincidence of f and g. In 1986, Jungck gave the concept of compatible mappings [9]. A pair (A, B) of self mappings of a metric space (X, d) is said to be compatible if $\lim_{n\to\infty} d(ABx_n, BAx_n) = 0$, whenever $\{x_n\}$ is a sequence in X such that

$$\lim_{n\to\infty} Ax_n = \lim_{n\to\infty} Sx_n = t \ \ for \ \ some \ \ t \in X.$$