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RANKING GENERALIZED INTERVAL VALUED PENTAGONAL FUZZY NUMBERS TO SOLVE FUZZY TRANSPORTATION PROBLEM

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Abstract: In day today life, decision makers come across uncertain and incomplete information. Depending on the graphical representation, the suitable uncertain numbers are chosen to model the real life situation mathematically. The generalized interval valued pentagonal fuzzy numbers are much better in representing the imprecise information. The main objective of this paper is to justify the possibility of representing the vague information as generalized interval valued fuzzy numbers.The ranking technique average of the $\alpha-$cut of a generalized interval valued pentagonal fuzzy number [GIVPFN] is also proposed. The ranking formula is set up to defuzzify and solve the fuzzy transportation problem [GIVPFTP] whose costs are generalized interval valued pentagonal fuzzy numbers. This new defuzzification technique is validated by the comparative analysis.

Keywords and Phrases: Interval Valued Pentagonal Fuzzy Numbers, Generalized Interval Valued Pentagonal Fuzzy Numbers, Generalized Fuzzy Transportation Problem, and Ranking of Generalized Interval Valued Pentagonal Fuzzy Numbers.

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1. Introduction

Zadeh L A [15] introduced the fuzzy set theory in 1965. Chang and Zadeh [5] introduced the concept of fuzzy numbers.The sets defined on the real line $\mathbb{R}$, known