INTUITIONISTIC LEVEL SUBGROUPS IN CYCLIC GROUPS OF ORDER p^n

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Abstract: In this paper, we investigate whether the level subgroups of intuitionistic fuzzy subgroups of a group form a chain. The fuzzy counterpart of the same has already been proved affirmative. We ratify the result for cyclic groups of prime order and then for cyclic groups of prime power order. Finally, we illustrate our results through some numerical examples.

Keywords and Phrases: Intuitionistic fuzzy set, intuitionistic fuzzy subgroup, level subgroup, prime power, cyclic group.

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1. Introduction

The idea of a *fuzzy subset* of a non-empty set was proposed by L. A. Zadeh [22] in 1965. He defined a fuzzy subset A of a universal set X as a membership function $A : X \to I$ where $I = [0, 1]$. Now, fuzzy mathematics has become an area of meticulous research, having applications in a variety of fields such as engineering [19], computer science [8], medical diagnosis [10], social behavior studies [4], decision making [11] etc. After the introduction of fuzzy sets, several generalizations of abstract mathematical structures to the fuzzy context have come up. In the course of