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พ.ศ. ๒๕๑๕

ON LOCALLY CYCLIC DECOMPOSABLE GROUPS

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ABSTRACT

A locally cyclic group is one in which every finitely generated subgroup is cyclic. A locally cyclic decomposable group is one which is a disjoint union of locally cyclic subgroups. In this thesis, we study the locally cyclic decomposable groups. In particular, we show that any group can have at most one locally cyclic decomposition and if such decomposition exists, it is just the collection of all the maximal locally cyclic subgroups of the group. We also show that an abelian group G is locally cyclic decomposable if and only if its torsion subgroup tG is either locally cyclic or else is the disjoint union of a family of p -cocyclic subgroups, for some prime p . However, for non-abelian group G we can show only that the following are equivalent :

- a. G is torsion-free locally cyclic decomposable.

b. G is a disjoint union of a family of abelian torsion-free subgroups.

c. For any non-zero integer n , for any $x, y \in G$, $x^n = y^n$ implies $x = y$.

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