MODULES OVER INTEGER GROUP RINGS OF SOLUBLE GROUPS THAT ARE CLOSE TO MINIMAX MODULES

DASHKOVA OLGA

Investigation of modules over group rings is an important direction of modern algebra. Artinian and noetherian modules over group rings are a broad class of modules over group rings. The generalization of artinian and noetherian modules is the class of minimax modules (ch. 7 [1]). Let A be an $\mathbf{R}$–module, $\mathbf{R}$ be a ring, G be a group. A is called *a minimax* $\mathbf{R}$*–module*, if A has the series of submodules such that every its factor is either artinian or noetherian $\mathbf{R}$–module. It arises the question on investigation of modules over group rings which are not minimax but are similar to minimax modules in some sence.

The main result of the work is the theorem.

Theorem. *Let A be a $\mathbb{Z}G$–module, $\mathbb{Z}$ be a ring of integers, G be an infinite soluble group, $C_G(A) = 1$. If $A/C_A(G)$ is not a minimax $\mathbb{Z}$–module and for every proper subgroup H of G the quotient module $A/C_A(H)$ is a minimax $\mathbb{Z}$–module then G is isomorphic to C_{q^∞} for some prime q.*

We construct the example of a $\mathbb{Z}G$–module A with the mentioned properties where G is isomorphic to C_{q^∞} for some prime q.

References

[1] Kurdachenko L.A., Subbotin I.Ya., Semko N.N. Insight into Modules over Dedekind Domains. Kyev: National Academy of Sciences of Ukraine, Institute of Mathematics (2008).

Dnepropetrovsk national university
E-mail address: odashkova@yandex.ru