A note on quasiorder lattices

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A quasiorder (relation), also known as a preorder, is a reflexive and transitive relation. The quasiorders on a set A form a complete lattice with respect to set inclusion. Ivan Chajda and Gábor Czédli proved in 1996 that these lattices are six-generated. Recently, Tamás Dolgos' gave a five-element generating set in the countable case.

Assume that A is a set such that there is no inaccessible cardinal less than or equal to $|A|$; note that in Kuratowski's model of ZFC, all sets A satisfy this assumption. Generalizing the previous results, we prove that in this case the lattice of quasiorders on A is five-generated, as a complete lattice.

[1] I. Chajda, G. Czédli, How to generate the involution lattice of quasiorders?, *Studia Sci. Math. Hungar.* **32** (1996), 415–427.

[2] G. Czédli, Four-generated large equivalence lattices, *Acta Sci. Math.* **62** (1996), 47–69.

[3] T. Dolgos, Generating equivalence and quasiorder lattices over finite sets (in Hungarian), *BSc Thesis, University of Szeged* (2015).