

Five-valued multi modal epistemic Łukasiewicz logic with constants

Zurab Vashakidze^a

e-mail: zurab.vashakidze306@ens.tsu.edu.ge

^a The Faculty of Exact and Natural Sciences, Tbilisi, 2 University Street

The theory of five-valued multi modal epistemic Łukasiewicz logic with constants $EL_5^c(n)$, which is an extension of the five-valued Łukasiewicz logic L_5 , the language of which is extended by nullary and unary connectives is developed in the work; at the same time it is developed algebraic theory corresponding to this logic. The unary connectives are interpreted as modal operators (knowledge operators). This logic is axiomatically defined and the completeness theorem with respect to the variety of corresponding algebras is given. Notice that this logic is applied in studying immune system.