A wide variety of questions which range from social and economic sciences to physical and biological sciences lead to functions with values that are sets in finite or infinite dimensional spaces, or that are fuzzy sets. With the fast-moving development of uncertainty quantification and set-valued optimization, such set-valued and fuzzy-valued functions attract recently a lot of attention. In this talk we consider a generalized concept of such functions, that of functions with values in so-called L-space, that encompasses set-valued and fuzzy functions as special cases and allow to investigate them from the common point of view. We will discuss several problems of Numerical Analysis for functions with values in L-spaces. In particular numerical methods of solution of Fredholm and Volterra integral equations for such functions will be presented. (Received March 17, 2017)