ABSTRACT

In the thesis, the author introduced and studied the concepts of smooth fuzzy centred system, the absolute $\omega(R)$ of a smooth fuzzy topological space, extremally and basically disconnectedness in smooth fuzzy centred system, smooth fuzzy contra $G_\delta$-continuous function, smooth fuzzy almost $G_\delta$-compactness, smooth fuzzy $S$-closed spaces, smooth fuzzy $G_\delta$-regular and $G_\delta$-normal spaces, smooth fuzzy $\beta$-continuous functions, smooth fuzzy $\beta$-$T_{1/2}$ spaces, $r$-fuzzy semi (resp. $G_\delta$)-$\gamma$-open set, $r$-fuzzy semi (resp. $G_\delta$)-$\gamma$-regular space, $r$-fuzzy semi (resp. $G_\delta$)-$\gamma$-normal space, $r$-fuzzy semi (resp. $G_\delta$)-$\gamma$-$T_i$ spaces ($i = 0, 1, 2, \frac{1}{2}$), $r$-fuzzy semi (resp. $G_\delta$)-$\gamma$-$R_0$ space, smooth fuzzy upper b-irresolute multifunction, smooth fuzzy b-connected space, smooth fuzzy super b-connected space, smooth fuzzy strongly b-connected spaces. Properties, characterizations and interrelations among the concepts introduced are discussed. Also, examples and counter examples are provided wherever necessary.