ABSTRACT

In this thesis, the author introduced and studied the concepts of $\gamma^*$-open set, $\gamma^*$-continuous mapping, almost strongly $\theta-\gamma^*$-continuous mapping, super $\gamma^*$-continuous mapping, $\gamma^*$-splitting, $\gamma^*$-jointly continuous, maximal $G_\delta$-centred system, $G_\delta$-extremally disconnected space, the absolute $\omega^*(R)$ of space $R$, $G_\delta$-perfect mapping, centred quasi-uniform structure spaces, centred quasi-uniform bicomplete space, centered $T_0^*$-compactification, b-open symmetric in uniform space, uniform-b-regular space, uniform b-normal space, $\theta^*$-closed set, $H^*$-closed set, b-net, b-accumulation point, b-complete accumulation point and b-compact spaces. Properties, characterizations and interrelations among the concepts introduced are discussed. Also, examples and counter examples are provided wherever necessary in the thesis.