

## ABSTRACT

The thesis deals with iteration procedures in fixed point theory. The iteration procedures discussed here are due to Picard, Mann, Kirk and Ishikawa. The fixed points of mappings are generally obtained as convergent points of iteration schemes provided the schemes converge. Bearing this in mind, we have discussed the convergence of various iteration schemes separately for nonexpansive, quasi - nonexpansive, asymptotically nonexpansive, quasi - contractive, pseudocontractive, strictly pseudocontractive, demicontractive and hemicontractive mappings of a Hilbert space. It has been observed that for some mappings more than one iteration scheme converges to fixed points and in some cases none of the schemes converges to fixed points.

**Key Words :** Fixed points, iteration procedures, Banach space, Hilbert space, convexity, uniform convexity, demicompactness, nonexpansive, asymptotically nonexpansive, quasi - contractive, pseudocontractive and strictly pseudocontractive mappings.