

## **ABSTRACT**

It is well known that the class of  $JB^*$ -algebras, originally introduced by *Kaplansky* in 1976 and studied by *J. D. M. Wright*, properly includes all  $C^*$ -algebras. This raises a natural question of extending the  $C^*$ -algebra theory to general  $JB^*$ -algebras. Like several authors, we in this thesis generalize certain  $C^*$ -algebra results to  $JB^*$ -algebras. These include investigation of various algebraic as well as topological properties of normal, invertible and unitary elements. In the sequel, we also study the centre of a  $JB^*$ -algebra and its unitary isotopes, previously studied by *M. A. Youngson* and *A. A. Siddiqui*.