

ABSTRACT

Completely positive maps is an important field due to its significance, application and mathematics itself. While discussing the properties of the positive maps, researchers have questioned whether the properties of the positive maps also hold for completely positive maps. In chapter 1, we have started with a C_* -algebra A , generated on A other C_* -algebras and then investigated these forms of C_* -algebras. We investigated whether the properties of A such as self-adjointness and completeness under norm still hold on the C_* -algebras generated on A . In chapter 2, the condition for the positivity of the elements of these generated C_* -algebras is given. This has been done by showing that their inner product with elements from a Hilbert space is positive. A unital contraction is necessarily positive. Conditions under which positive maps are completely positive are discussed. In chapter 3, boundedness and complete boundedness of these maps have been investigated. This, we have done by showing that, indeed, whenever the operator system is a C_* -algebra, then a positive map is bounded and completely bounded, if its norm is equal to its complete bound which must be finite. All completely positive maps are completely bounded, however the converse is not always true. This has been shown by giving examples and counter examples. The results of this study will pave way for construction of new C_* -algebras from the known ones, which will be helpful in the development of the research on positive maps on these generated C_* -algebras and may also be applied by mathematicians in solving spectral problems.