

Abstract

In this thesis, we interested in optimizing multi-objective programming

problems which are involving generalized semi E-convex functions.

The

study goes through three broad lines. The first concerns with the generalized semi E-convex functions which are quasi semi E-convex functions and pseudo semi E-convex functions. Optimality criteria for nonlinear programming problem involving those functions are investigated. Along the second line, the characterization of efficient solutions for multi-objective programming problems involving semi E-convex

functions are considered. We are interested in characterizing those problems

by weighting and ε -constraint approaches. The necessary and sufficient conditions

for a feasible solution to be an efficient or properly efficient solution are derived.

An approximation algorithm for finding efficient solutions for semi E-convex

multi-objective programming problems is investigated along the Third line.