

## **ABSTRACT**

In this thesis we give a brief introduction to the group theory and symmetric groups. Useful definitions and results of representation theory and character theory are then given. Further more, with the help of Computer Program in GAP character table of  $S_{11}$  is constructed.

From the character table of  $S_{11}$ , the classes of order 2, 3 and 5 are then picked for the study of  $A_5$  as (2,3,5) group main part of the thesis.

The existence of the alternating group  $A_5$  with different conjugate classes as a subgroup of  $S_{11}$  is then established.