# THE KENYA POLYTECHNIC UNIVERSITY COLLEGE

## SCHOOL OF ENGINEERING, SCIENCE AND TECHNOLOGY

## ELECTRICAL AND ELECTRONIC ENGINEERING DEPARTMENT

## TRADE PROJECT


PRESENTED BY: MALIKA JOHN KENNEDY

COLLEGE NO: 107/00284


PROJECT TITLE: ±12V DUAL VOLTAGE POWER SUPPLY

OPTION: POWER OPTION

COURSE CODE: Et303107

SUPERVISOR: MR. J.M. MBUTHI

D TO: KENYA POLYTECHNIC UNIVERSITY COLLEGE

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# PREFACE

Many electronic devices nowadays need dual power input for their maximum efficiency. This dual-voltage power supply is designed for those components that require -12v and +12v.

This project is designed to produce a dual voltage i.e. ±12v. It incorporates a transformer which is center tapped (12v-0v-12v 1A). This transformer steps down the 240v 50Hz. The stepped down voltage passes through a full bridge voltage rectifier composed of 4 diodes. The rectifier circuit changes the pulsating a.c signal from the transformer to a continuous d.c signal although with a few ripples.

The rectified voltage is filtered using capacitors to remove any ripple that may exist. These capacitors are: electrolytic and ceramic capacitors. The filtered voltage is regulated using a positive voltage regulator i.e. 7812 IC that ensures a steady +12v output. On the other rail the filtered voltage is rectified using a negative voltage regulator i.e. 7912 IC