LAPURAN PROJEK TAHUN AKHIR

DIPLOMA LANJUTAN KEJURUTERAAN ELEKTRIK KUASA

KAJIAN KEJURUTERAAN I.T.M. SHAH ALAM

MCMURRAY BEDFORD INVERTER

BY

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CHAPTER 1

INTRODUCTION:

Inverter is a circult or device for converting d.c Voltage to a a.c voltage, followed by step up transformer. In most cases, the output of the inverter is in a square form which contain a lot a of harmonic. To reduce these harmonic content, we use a pulse width modulated technique and filter the output through the L.C filter.

Inverter may be used as a stand by emergency lighting supply or to drive any equipment which require an a.c source such as:-

i. a.c motor

ii. radio or electronic equipment meant to operate on a.c

iii. high frequency heating (Induction furnace)

iv. solar electricity applications

v. high voltage d.c. suplies

AIM:

Design a half bridge Mcmurray Bedford Inverter student Experiment model. The rating of the model is 10 Amp.

THEORY:

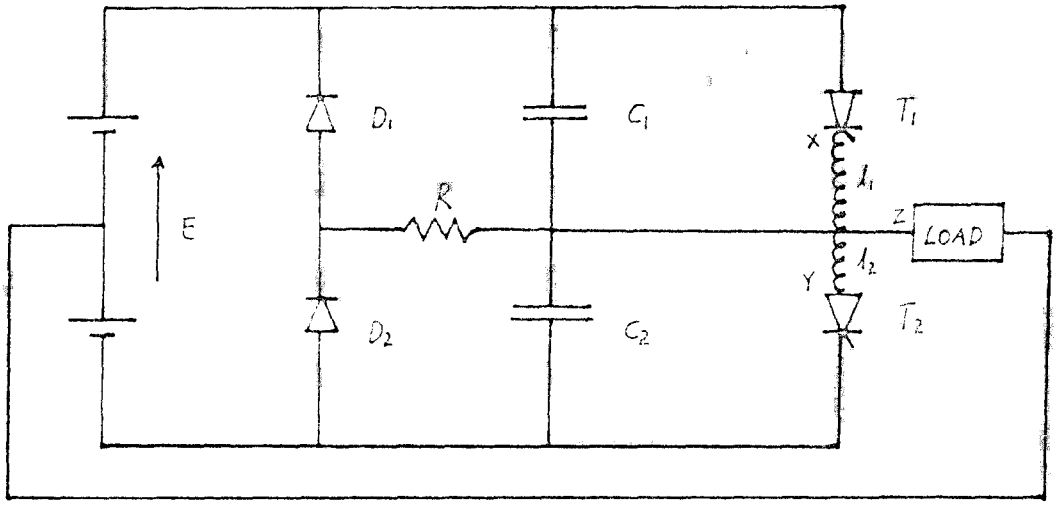

figure 1

The main circuit consist of Thyristors, Capacitors, diade and a centre tap transformer. The commutating Capacitor C_1 and C_2 are equal, and the two halves of the commutating inductance l_1 and l_2 are equal and tightly coupled by being wound on the same core. For purpose of analysis one half cycle of operation is divided into five step A, B, C, D, E