

## Chapter VII

## DISCUSSION AND CONCLUSION



## Discussion

The values of winding resistance obtained from the test are lower than the designed values. These may be caused by the designed values were calculated at the temperature of 75°C where the test was performed and obtained the results at the ambient temperature of 29°C. In testing the voltage ratio. It is seen that there is slightly error. However the voltage ratio is in the limit of validity. The low values of core loss and copper loss obtained from the test are insignificant. The exciting current obtained from the test is about 3% of the full load current. Induced voltage test was performed for insulation testing. The test shows no damage which meant that this transformer had been designed and constructed with adequate insulation. The secondary output voltage wave shape of this transformer is shown in Fig 6.8 It can be seen that the output wave shape is purely sinusoidal. This means that this transformer can be used in the testing circuit.

## Conclusion

The work described in this thesis shows that all the results from the tests of this transformer are closed to the designed values. It is seen that there are slightly differences. However the results shows that this transformer conforms to the IEC standard.

For the future research, although it is possible to produce more than half a million volts from a single unit, but the problem of construction and transport may necessitate a cascade connection at voltage exceeding

this figure.

The designed of this transformer must be modified. For example, the midpoint of the transformer must be connected to the tanks and each end of the winding is tapped and insulated to permit one end being used for magnetizing and primary load current, the other end for the magnetizing and load current of the next transformer. All the transformer tanks have to be insulated from earth.