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DEMONSTRATION EXPERIMENTS
WITH THE OSCILLOSCOPE

A PROJECT REPORT PRESENTED

BY

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ABSTRACT

Experiments play a major role in the teaching of science subjects. Physics, more than any other science subject can be taught more effectively by simple demonstration experiments.

The work described here mainly focuses on the experiments that can be demonstrated to Advanced Level students by using a Cathode Ray Oscilloscope (CRO). In this project, concepts that most students find difficult to understand and the sections that were newly introduced to Advanced Level syllabus have been given emphasis. Characteristics of different kinds of diodes and transistors, charging and discharging of a capacitor and the concept of resonance are some of the demonstration experiments that were carried out. The equipment used for this study were limited to what is usually found in a school A-level laboratory. Other than the CRO, only a few other instruments such as signal generators, microphones, loudspeakers were used.

It is important to mention that, for most of the experiments, it takes about 15 to 20 minutes to arrange the apparatus and only a few seconds to display the outcome on the screen of the CRO. The use of the CRO has many more advantages over conventional laboratory methods. Better presentation of data, higher efficiency and saving of time are some of them. A few of these experiments (diode characteristics, resonance, charging and discharging) were demonstrated to some A-level students

during the course of this study. Student response was very positive and there was clear indication that they were able to grasp ideas more easily through the demonstration experiments with the CRO.

