

## **WRITE-UP FOR EXPERIMENTS**

Students should record down clearly all the experiment details, such as results and findings, procedures and precautions, conclusions and discussion, etc.

Basically, two types of write-up now exists for students to put down the information :

- (A) Laboratory Log Book
- (B) Formal Reports

### **(A) Laboratory Log Book**

This should take the form of an on the spot laboratory record of the experimental work and its results. **It must be written up as the experiment proceeds. A standard logbook must be used.** Whenever possible calculations should be carried out and graphs plotted as the measurements are made. A brief discussion of the results should subsequently be included. Sufficient detail of the procedure and apparatus (*including serial numbers*) should be recorded or, where possible, reference to the laboratory instruction sheet made, to enable a formal report to be written at a later date if required or the experiment to be repeated if the results are suspected. As a reminder, the laboratory sheet is only a guide and is unlikely to contain entire information in itself.

The laboratory log book must be a bound note-book, as recommended to you by the Department and should be suitably indexed. This book must be checked, **initialled** and marked/graded by the lecturer/supervisor **at the end of each laboratory period.** Note that the log book is a work book and not something to be written up neatly after the laboratory session. The assessment, therefore, will take account of this.

### **(B) Formal Reports**

These are intended to convey information about experimental work from the experimenter to the reader, and they will be judged by the success with which they do so. The following points should assist in this task :

- (i) When reporting on your actions always use proper complete sentences and write in a clear, grammatically correct English style using either the *third person* and the *past passive tense*, e.g. "The frequency was adjusted...", or the *first person* and the *past active* "We adjusted the frequency...", but **do not use both** these forms in the same report.
- (ii) Keep every sentence relevant to the work. Do not get carried away with long accounts of things only remotely connected with the topic of the report.
- (iii) No useful purpose is served in just describing the shape of a graph.
- (iv) Do not make vague statements like, "The experiment was a success".
- (v) The purpose of the laboratory sheet is to instruct you in how to perform the experiment. It does **not** form the basis of a formal report. The report is to tell other people what you **actually did** and your deductions from the work.
- (vi) Ensure that the number of significant figures relate to the accuracy of the measurements.

- (vii) The "Formal Report" must be typed on loose leaf A4 paper. Diagrams, graphs, tables and equations may be neatly drawn/written by hand. The sheets should be clipped together and marked FORMAL to avoid any confusion.

## **FORMAT OF FORMAL REPORT**

### **Name, Title**

### **Summary (or Abstract)**

Not more than 100 words giving the objectives, an indication of the methods by which these were achieved and a statement of the main results and conclusions. This should be on a separate sheet in front of the main contents.

#### 1. Objectives

It is necessary to state the object of the experiment. This should provide the essential formulation of the questions to which answers are sought and should be more than simply a title since it determines the whole course of the investigation.

#### 2. Introduction

There should be a brief introduction so that an electronic engineer who is not familiar with the topic may understand enough to enable him to properly assess the relevance of the work to his particular field and interests.

#### 3. Theory

The theoretical background to the experiment should be outlined and the results of standard theory (not derivations) should be given. This should be limited to that directly applicable to the experimental work. Where appropriate suitable references should be listed.

#### 4. Experimental Procedure

The essential steps taken in carrying out the tests and in making the calculations must be explained, reference being made to the equipment used, to appropriate diagrams and to any tables of results and curves (*which should be included in the following section*).

#### 5. Results

These should include both experimentally and theoretically derived results. Graphical presentation is usually preferable when possible, and where several sets of results are to be compared they should be plotted on the same graph. This applies particularly to the comparison of experimental and theoretical results. Where results are plotted it is not necessary to include the tables from which the points were obtained, as these are already recorded in the laboratory log report.