

PLANNING AND DESIGNING AN EXPERIMENT

In addition to the preceding section on Practical Format, the following should be noted.

1. **HYPOTHESIS:**

A hypothesis is a statement which seeks to establish a possible relationship between two variables. In formulating a hypothesis, you should ensure that it is clearly stated in such a way that it can be tested.

2. **AIM:**

The aim must be relevant to the hypothesis.

3. **APPARATUS AND MATERIALS:**

List all essential pieces of apparatus and materials.

4. **METHOD:**

List all steps in the plan in a logically sequenced manner. However, you must use the *present tense*. The factors which are going to be kept constant as well as the responding variable should be stated. Ensure that you state the relevant experimental details.

5. **VARIABLES:**

State the manipulated variable and rewrite the controlled variables and the responding variable.

6. **DATA COLLECTED:**

State the readings or measurements which will be taken. For example, the temperature was recorded every minute for ten minutes. A suitable display of results, such as a table with headings and units may be useful.

7. **USE OF DATA:**

Explain how the data collected will be used to validate or invalidate the hypothesis. In doing so, you should try to link the data, both in support of and in opposition to your hypothesis.

8. **LIMITATIONS/ERRORS/ASSUMPTIONS:**

Discuss possible sources of error and state any assumptions made in the experiment. Any limitation which may be anticipated in carrying out the plan should be stated and its possible effect on the experiment explained.