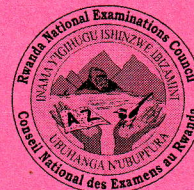


Physics III

050

10 Nov. 2010 8.30 – 11.30am



P. O. BOX 3817 KIGALI -TEL/FAX 586871

**ADVANCED LEVEL NATIONAL EXAMINATIONS 2010**

**SUBJECT: PHYSICS**

**PAPER III: PRACTICAL**

LYCEE DE KIGALI  
BIBLIOTHEQUE

- COMBINATIONS:**
- PHYSICS-CHEMISTRY-MATHS (PCM)
  - PHYSICS-CHEMISTRY-BIOLOGY (PCB)
  - MATHS-PHYSICS-GEOGRAPHY (MPG)
  - MATHS-PHYSICS-COMPUTER SCIENCE (MPC)

**DURATION: 3 HOURS**

**INSTRUCTIONS TO CANDIDATES:**

*Please read carefully before you start.*

This paper has one question.

Answer the question in this paper.

Candidates are **not allowed** to use the apparatus or write for the **first ten minutes**.

Graph papers are provided at the back of the answer booklet.

Write on one side of the paper only.

Non-programmable scientific calculators may be used.

Candidates are expected to record on their scripts all their observations as these observations are made and to plan the presentation of the records.

The working of the answers is to be handed in.

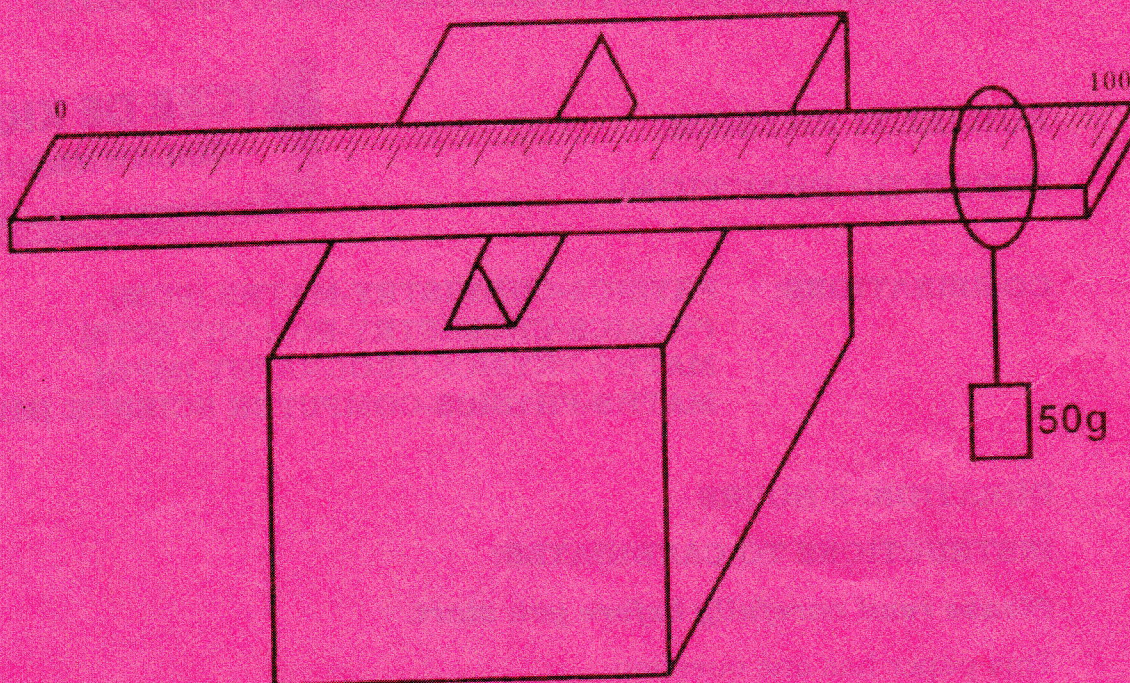
Details on the question paper should not be repeated in the answer, nor is the theory of the experiment required. Candidates should, however, record any special precautions they have taken and any particular feature of their methods of going about the experiment.

**Marks are given mainly for a clear record of the observations actually made, for their suitability and accuracy, and for the use made of them.**

## QUESTION

In this experiment, you will determine the mass  $M$  of a metre rule provided.

- Balance the metre rule on the knife edge.
- Read and record the balance point,  $P_0$ .
- Suspend a 50 g mass at the 60.0 cm mark,  $P$  and balance the metre rule on the knife edge as shown in figure 1.



- Read and record the balance point,  $P_1$ .
- Repeat procedures (c) and (d) for values of  $P=65.0, 70.0, 75.0, 80.0$  and  $85.0$  cm.
- Tabulate your results including values of  $P_1-P_0$  and  $P-P_1$ .
- Plot the graph of  $P_1-P_0$  (along the vertical axis) against  $P-P_1$  (along the horizontal axis).
- Determine the slope,  $s$ , of the graph.
- Calculate the value of  $M$  from the expression  $sM=50$ .