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CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education Ordinary Level

**PHYSICS**

**5054/03**

Paper 3 Practical Test

May/June 2003

**2 hours**

**ANSWER BOOKLET**

**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name on all the work you hand in.  
Write in dark blue or black pen in the spaces provided on this Answer Booklet.  
You may use a soft pencil for any diagrams, graphs or rough working.  
Do not use staples, paper clips, highlighters, glue or correction fluid.  
All of your answers should be written in this Answer Booklet: scrap paper must **not** be used.

Answer **all** questions.  
Graph paper is provided in this Answer Booklet. Additional sheets of graph paper should be used only if it is necessary to do so.  
At the end of the examination, fasten any additional answer paper used securely to this Answer Booklet.

For Examiner's Use	
1	
2	
3	
4	
<b>TOTAL</b>	

If you have been given a label, look at the details. If any details are incorrect or missing, please fill in your correct details in the space given at the top of this page.

Stick your personal label here, if provided.

This document consists of **7** printed pages and **1** blank page.



**Section A**

1 (a) determination of the average value for  $T$

(b) determination of average values for  $l$  and  $w$

(c) record of  $M$

(d) calculation of density using  $\text{density} = \frac{\text{mass}}{\text{volume}}$

(e) statement of the measurement that causes the greatest uncertainty in the density

reason for your choice

2 (b) (i) record of  $h_O$

(ii) record of  $h_I$

(iii) record of  $v$

(c) (i) calculation of  $m$  using  $m = \frac{h_I}{h_O}$

(ii) calculation of  $f$  using  $f = \frac{v}{m + 1}$

(d) description of the test used to see if the image is inverted

3 (a) diagram of the circuit that has been set up by the Supervisor

(b) record of  $\theta_1$

(c) record of  $I$  and  $V$

record of  $\theta_2$

(d) calculation of  $c$  using  $c = \frac{IVt}{m(\theta_2 - \theta_1)}$ , where  $m = 50 \text{ g}$

**Section B**

4 (a) record of  $l$

(b) description of the method used to check that the metre rule is horizontal

(c) record of  $F$  and  $d$

(d) table of values of  $d$ ,  $F$  and  $1/d$

(e) using the grid on page 7, plot a graph of  $F/N$  on the  $y$ -axis against  $(1/d)/(1/\text{cm})$  on the  $x$ -axis

(f) determination of  $G$

(g) determination of  $W$  using  $W = G/l$



