

Centre Number	Candidate Number	Name
---------------	------------------	------

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education Ordinary Level

**PHYSICS** **5054/03**

Paper 3 Practical Test October/November 2004

**ANSWER BOOKLET** **2 hours**

**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.

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.

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

## Section A

1 (a) record of  $R$

(b) record of  $h_2$

record of  $h_1$

record of  $l$

(c) explanation of how the vertical heights  $h_1$  and  $h_2$  were measured

(d) (i) calculation of  $\theta$  using  $\cos \theta = \frac{h_2 - h_1}{l}$ ,

(ii) calculation of  $W$  using  $W = \frac{R}{\tan \theta}$ .

2 (a) record of  $\theta_1$

(b) record of  $\theta_2$

record of  $\theta_3$

(c) (i) calculation of the loss in thermal energy of the hot water using  
change in thermal energy = mass  $\times$  specific heat capacity  $\times$  temperature change  
where specific heat capacity of water = 4.2 J/(g K)  
and 1 cm<sup>3</sup> of water has a mass of 1 g

(ii) calculation of the gain in thermal energy of the cold water

(d) explanation of any difference between the two answers obtained in part (c)

3 (b) record of  $f_1$

(c) explanation of how it was ensured that  $f_1$  was measured from the centre of the lens

(d) record of  $f_2$

(e) diagram showing water between lens and mirror

statement as to whether the water acts as a converging lens or a diverging lens

**Section B**

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

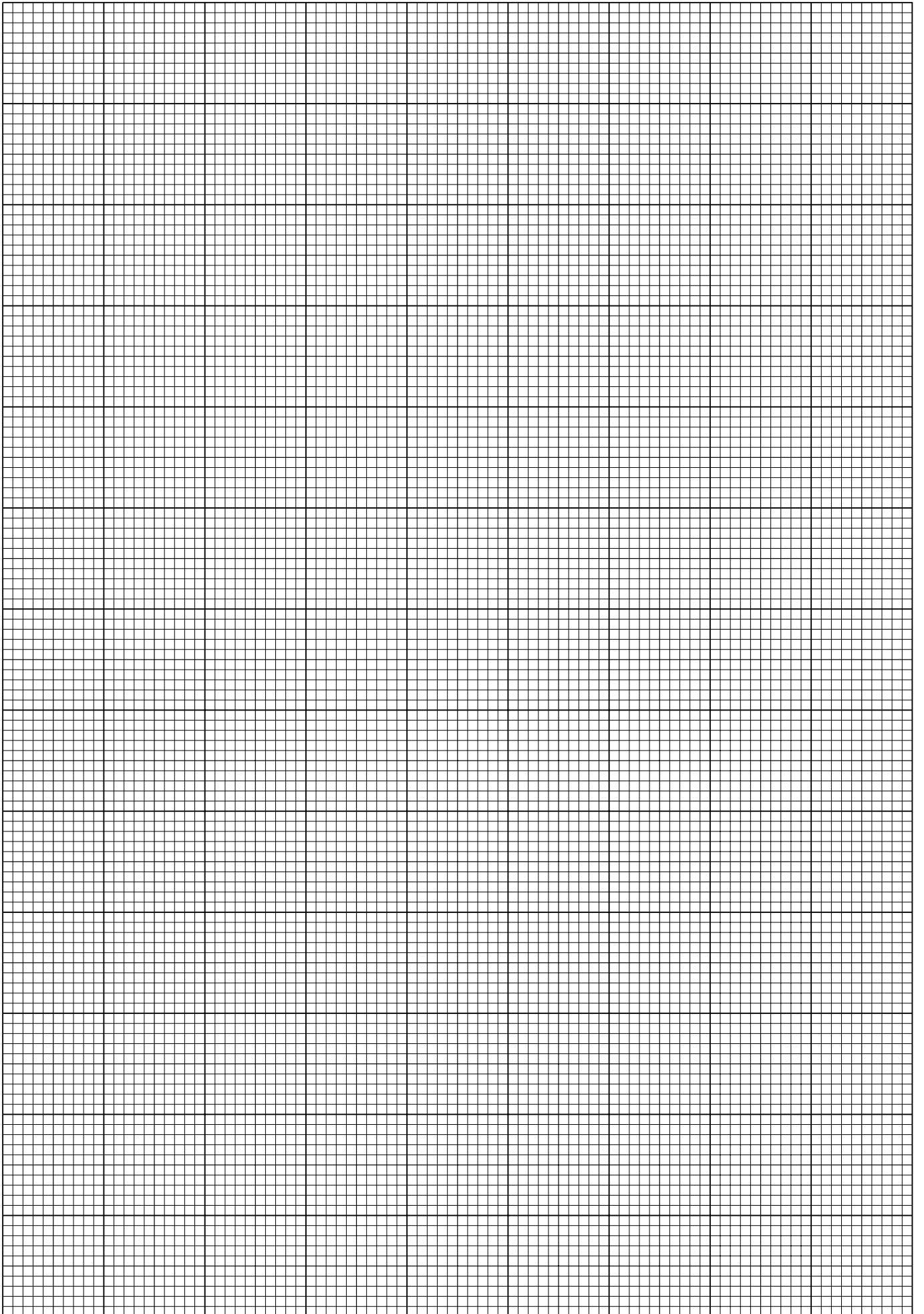
(b) record of  $V$  and  $I$

(c) table of values of resistors used,  $V$  and  $I$

(d) using the grid on page 7, plot a graph of  $V/V$  on the  $y$ -axis against  $I/A$  on the  $x$ -axis

(e) determination of  $S$

(f) determination of  $r$



**BLANK PAGE**

---

Every reasonable effort has been made to trace all copyright holders. The publishers would be pleased to hear from anyone whose rights we have unwittingly infringed.

University of Cambridge International Examinations is part of the University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.