UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the June 2005 question paper

0625 PHYSICS

0625/06 **Paper 6 (Alternative to Practical), maximum mark 40**

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initially instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

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Grade thresholds for Syllabus 0625 (Physics) in the June 2005 examination.

	maximum mark available	minimum mark required for grade:			
		A	C	E	F
Component 6	40	33	25	20	15

The threshold (minimum mark) for B is set halfway between those for Grades A and C.
The threshold (minimum mark) for D is set halfway between those for Grades C and E.
The threshold (minimum mark) for G is set as many marks below the F threshold as the E threshold is above it.
Grade A* does not exist at the level of an individual component.

June 2005

GCSE

MARK SCHEME

MAXIMUM MARK: 40

SYLLABUS/COMPONENT: 0625/06

PHYSICS
Alternative to Practical

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1 **(a)** 21°C (ignore unit) (20.9 acceptable) **[1]**

(b) **(i)** t in °C and V in cm^3 **[1]**

(ii) θ axis labelled, with unit **[1]**
scale 10°C to 1 cm
or 0 - 100 in 25 sq steps or 20 - 80 in 10 sq steps **[1]**
correct plots to ½ sq (-1 each error) **[2]**
well judged best fit line **[1]**

(c) heat lost to surroundings or by evaporation **[1]**

[total: 8]

2 **(a)** 12 cm^3 **[1]**
0.5 A **[1]**
30 cm^2 **[1]**
0.112 kg **[1]**
600 N **[1]**

(b) repeats **[1]**
to spot anomalous results/to calculate average **[1]**
or series of different V and I, plot graph
or switch on/off, prevent temp rise
or low current, minimise temp rise
or avoidance of parallax, action and reason
or clean wires, resistance caused by dirt
or tap meter, prevent sticking
or check zero error, accuracy
(in each case the reason must support the statement
to gain the second mark)

[total: 7]

3 **(a)** l values 50, 75, 100 **[1]**

(b) 1.50 V shown correctly **[1]**
0.375 A shown correctly **[1]**

(c) 2.5(3); 4.0(0); 5.2(0) all correct **[1]**
all to 2sf or all to 3sf **[1]**

(d) Ω **[1]**

(e) R = 7.50 - 8.00 **[2]**
(or R = 6.60 - 7.49)

[total: 8]

4 **(a)** 0.90; 0.78; 0.63 (-1 each error, ignore sf) **[2]**

(b) 0.00225; 0.00260; 0.00315 all correct (ecf) **[1]**
all to 2sf or all to 3sf **[1]**

(c) NO **[1]**
T/m increases as m decreases (wtte) - if statement (no) correct **[1]**

(d) time n oscillations **[1]**
divide by n (n at least 3) **[1]**

(e) lower spring fully compressed (wtte) **[1]**

[total: 9]

5 **(a)** normal in correct position and at 90^{o} (by eye) **[1]**

(b) i = 29 - 31 **[1]**

(c) refracted ray correct side of normal and at angle < i **[1]**
r = 18 - 22 **[1]**

(d) ray displaced and parallel to incident ray (by eye) **[1]**
all correct lines drawn neatly, not too thick, and forming continuous path **[1]**

(e) two pins on emerging ray, labelled Y and Z **[1]**
pins at least 3 cm apart **[1]**

[total: 8]