UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2007 question paper

0625 PHYSICS

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

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

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.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the May/June 2007 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

1 **(a)** θ_1 = 23
unit °C correctly written

(b) 19 (°C) ecf [1]
34 (°C) ecf [1]

(c) **(i)** heat loss (to surroundings) [1]

(ii) any two from:
insulation / mat / foil
lid
speedier transfer
repeats
wait to record max temperature
stirring
include beaker in calculation [2]

[Total: 7]

2 **(a)** and **(b)** 6 *d* values [1]
correct values for *d* 5, 10, 15, 20, 25, 30 [1]

(c) h_0 = 100mm (including unit, cm/m allowed) [1]

(e) correct values for *b* 40, 35, 32, 28, 24, 20 (ecf) [1]

(f) Graph:
correct *d* axis labelled with symbol / unit [1]
plots to nearest ½ sq (-1 each error or omission) [2]
best fit straight line [1]
single line, thin and best fit [1]

(g) no
line not through origin
OR when *b* increases, *d* decreases
OR negative gradient [1]

(h) use of set square / protractor / spirit level / plumbline [1]

[Total: 11]

3 **(a)** correct arithmetic for *R* values 7.92, 1.98
both *R* to 2sf OR both to 3sf
all correct units: *V*, *A*, Ω

(b) final box (ecf) [1]
second *R* (or *I*) about ¼ of first [1]

(c) lamp symbol correct [1]
ammeter and voltmeter symbols correct [1]
correct parallel circuit (ONE ammeter and ONE voltmeter, no extra components, but accept switch if present, ignore power source or lack of) [1]

[Total: 8]

4 **(a)** correct arithmetic for *f*, 0.154, 0.144 (any sf) [1]
correct average *f* (0.149, ecf) [1]
average *f* to 2/3 sf [1]
correct unit for average *f* (m) [1]

(b) precautions:
any two from:
use darkened area (wtte)
metre rule on bench or clamped
object and lens same height from bench
mark on lens holder to show position of lens centre
take more readings
choosing mid point between acceptable positions
parallax, action and reason
lens/screen perpendicular to bench [2]

(c) inverted [1]

[Total: 7]

5 **(a)** weight / load / force / W / L / F
length / l
extension / e / x / $(l - l_0)$
units N, mm, mm [

(b) any three from
length of spring / l_0
diameter/thickness of spring
range of loads
length of wire
diameter / thickness of wire
number of coils
coil spacing [3]
do NOT allow 'size' or room temperature

[Total: 7]