

## **MARK SCHEME for the May/June 2008 question paper**

### **0625 PHYSICS**

**0625/06**

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

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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.

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- 1 (a) (i) cm, cm, g [1]
- (ii) 49.66 (or 49.7), 49.50 (or 49.5), 50.05 (or 50.0) [1]  
consistent significant figures (3 or 4) [1]
- (b) clear explanation/diagram [1]
- (c) correct method [1]  
value 49.7 (ignore a fourth significant figure)  
and allow ecf from (ii) [1]
- (d)  $d = 1.8$  (cm),  $t = 1.2$  (cm) [1]  
 $V = 3.05$  (cm<sup>3</sup>) (ecf) [1]  
 $\rho = 16.3$  unit g/cm<sup>3</sup>, 2/3 significant figures (ecf) [1]

[Total: 9]

2 Table:

- (a) Units V, A,  $\Omega$  (symbol/word) [1]  
R values 1.11, 2.19, 5.05, 9.55 [1]  
Consistent 2 or consistent 3 sig fig for R [1]
- (b) (i) Yes (if within 10%) No (if not) [M1]  
Circuit 1 and circuit 2 compared [A1]
- (ii) limit current (so temperature not increased)  
OR switch off between readings  
OR check for zero error  
OR Repeats  
OR Parallax error explained  
OR Tapping meter [1]

[Total: 6]

3 Graph:

- Temperature axis labelled  $\theta/^{\circ}\text{C}$  [1]  
Suitable scales (plots occupy at least  $\frac{1}{2}$  grid) [1]  
Plots correct to nearest  $\frac{1}{2}$  square (–1 each error) [2]  
Lines well judged curves [1]  
Lines thin [1]
- (b) Statement:  
larger surface area increases rate of cooling [1]  
Justification:  
Correct reference to gradients of lines or readings [1]

[Total: 8]

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4 Trace:

- (a) all lines present, thin, neat and in correct area [1]  
normal at  $90^\circ$  (by eye)  
and EF at  $30^\circ$  to normal (by eye) [1]  
line KJ to at least beyond  $P_4$  [1]
- (b) (i)  $a = 12\text{--}13$  (mm) no ecf [1]  
(ii)  $b = 40$  (mm) no ecf [1]  
 $a$  and  $b$  both with appropriate unit [1]
- (c) (i) & (ii)  $c$  recorded and  $d = 44$  (mm) [1]  
(ii) correct calculation of  $n$ , value 1.43 (ecf) [1]  
2/3 significant figures with no unit [1]

[Total: 9]

- 5 (a) (i) triangle method used [1]  
(whether or not shown on graph)  
Triangle using more than half line  
and position indicated on graph [1]  
Expect  $G = 4.00\text{--}4.35$  (but allow correct working  
from points read from beyond 1.0 on x axis) [1]  
Expect  $g = 9.07\text{--}9.87$  (ecf from G) [1]
- (ii) greater accuracy/average value [1]
- (b) (i) amplitude [1]  
length [1]  
(other possible correct responses shape/size of bob  
and number of swings)
- (ii) does not affect time [1]

[Total: 8]