

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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- 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]
 $V = 3.05$ (cm³) (ecf) [1]
 $\rho = 16.3$ unit g/cm³, 2/3 significant figures (ecf) [1]

[Total: 9]

2 Table:

- (a) Units V, A, Ω (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° (by eye)
 and EF at 30° to normal (by eye) [1]
 line KJ to at least beyond P₄ [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]
 (iii) 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 [1]
 and position indicated on graph
 Expect $G = 4.00\text{--}4.35$ (but allow correct working [1]
 from points read from beyond 1.0 on x axis)
 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]