

**MARK SCHEME for the October/November 2010 question paper  
for the guidance of teachers**

**0625 PHYSICS**

**0625/61**

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, which would have considered the acceptability of alternative answers.

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- 1 (a) correct  $1/d$  values 0.0222, 0.0294, 0.0370, 0.0444, 0.0518 [1]  
all to 2 significant figures or all to 3 consistent significant figures [1]

- (b) graph: [1]  
axes suitable and labelled [1]  
all plots correct to  $\frac{1}{2}$  small square [1]  
good line judgement (position) [1]  
thin line, single, no blobs (quality) [1]

- (c) gradient by triangle method using at least  $\frac{1}{2}$  candidate's line [1]  
clear, on graph, how obtained [1]

- (d)  $z$  value 0.9 – 2.5 [1]  
2 or 3 significant figures and unit cm given [1]

**[Total: 10]**

- 2 (a)  $\theta_r$  26 [1]

- (b) (i)  $s$  and  $^{\circ}\text{C}$  in both tables [1]

- (ii) at least 300s and given to nearest 10s or in mins [1]

- (c) Table 2.2 (heating) justified by two temperature differences compared, [1]  
must see 14 and 44/56 OR 74 to 60 and 25 to 69/81

- (d) any two from: [2]  
same starting temperature  
constant room temperature/avoid draughts/same place  
same time intervals  
same thermometer (wtte)  
same mass/amount/volume of water  
same beaker  
lid always used

**[Total: 6]**

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- 3 (a) 0.3 – 0.31 [1]
- (b)  $\Omega$ , A [1]  
10.1 [1]
- (c) correct calculation of  $0.5I_0$  shown (ecf) [1]  
 $10(\Omega)$  [1]
- (d) diagram: [1]  
resistors in parallel [1]  
voltmeter symbol [1]  
voltmeter position [1]

[Total 8]

- 4 (a) (i) – (iii) [1]  
EF extended correctly and neat [1]  
 $P_3P_4$  line drawn correctly and neat [1]  
G labelled [1]  
 $P_1$  and  $P_2$  at least 5cm apart [1]
- (iv) and (v) 40 – 42 (ecf) [1]  
 $(\theta - 2i)$  correct (ecf) [1]
- (b) (i) 2 and unit ( $^\circ$ ) present at least once [1]
- (ii) yes (or No, ecf) [1]  
reference to 'within limits of experimental accuracy' [1]  
(or close enough or wtte) [1]
- (c) no concern about pins being vertical (or wtte) [1]

[Total: 10]

- 5 (a) any three from:  
mass/volume/amount of water  
room temperature  
temperature of water  
amount of stirring  
size/shape of beaker  
temperature of ice cube  
number/mass/size of cubes [3]
- (b) any three from:  
stopclock: time  
balance: mass  
thermometer: temperature  
measuring cylinder: volume (of water) [3]

[Total 6]