



PHYSICS

0625/52

Paper 5 Practical Test

May/June 2017

MARK SCHEME

Maximum Mark: 40

Published

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This document consists of **5** printed pages.

Question	Answer	Marks
1(a)(i)	V values to at least 1dp and < 3 V	1
	I values to at least 2 dp and < 1 A	1
	R values correct and to 2/3 consistent s.f.	1
	m, V, A, Ω	1
1(a)(ii)	correct difference	1
1(b)(i)	potential difference, current and resistance values present with $R_1 >$ final value in table	1
1(b)(ii)	new set of values present and sensible	1
	$R_1 = 2 \cdot R_2 \pm 10\%$	1
1(c)	to match results	1
1(d)	different heating effects on wires different interpolation of readings between marks on meters difficult to measure length of wire to nearest mm/to judge the position of the sliding contact cell may run down/power of cell may be less Any 2 · 1 mark each	2
	Total:	11

Question	Answer	Marks
2(a)	<i>a</i> values 40 cm, 35 cm, 30 cm, 25 cm, 20 cm	1
	<i>b</i> values all less than 50 cm and decreasing	1
2(b)	Graph: axes correctly labelled	1
	suitable scales	1
	all plots correct to ½ small square	1
	good line judgement, thin, continuous line	1
2(c)	expect NO. line does not pass through origin	1
2(d)(i)	mass 50 g to 200 g and <i>mX</i> seen	1
2(d)(ii)	calculations correct	1
	$Qb + mX$ must be between 36 and 40 inclusive	1
2(e)	not taken the weight of the rule/moment of the weight into account/the pivot is not at the centre of the rule	1
	Total:	11

Question	Answer	Marks
3(a)	ray-trace: normal in centre of AB and CD (by eye) <u>and</u> FE at 40° to normal	1
	first P ₁ P ₂ distance at least 5 cm	1
3(b)	P ₃ P ₄ line correctly drawn	1
	α correctly measured to $\pm 2^\circ$	1
	x correct to 2 mm	1
3(c)	α and β values 38 – 42	1
	correct units for x and y	1
	all lines present and in approximately correct positions and neat	1
3(d)	statement matches readings (expect YES)	1
	justification to include the idea of within (or beyond, ecf) the limits of experimental accuracy	1
3(e)	any one from: large pin separation/pins must be >5 cm apart ensure pins vertical/upright/perpendicular to the paper view bases of pins use thin pencil lines/thin pins	1
	Total:	11

Question	Answer	Marks
4	method to include:	
MP1	measurements of temperature of hot water over a period of time/measurement of temperature at start and end of a specified cooling time/measurement of time for a specified temperature drop	1
MP2	repeat using variety of fan speeds (blowing air over water surface)	1
MP3 MP4	two from: room temperature initial temperature of hot water volume/mass/amount of hot water distance of beaker to fan for each speed setting time of cooling temperature drop	2
MP5	table with columns for fan speed, time and temperature with units	1
MP6	compare readings to find which fan speed produces the greatest temperature drop/takes least time/plot a graph	1
MP7	in the same time/for the same temperature drop/compare slopes	1
	Total:	7