CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2012 series

0625 PHYSICS

0625/62

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.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.



	Page 2	Mark Scheme	Syllabus	Paper
		IGCSE – October/November 2012	0625	62
1	Normal corr Angle of inc	(± 0.1) (accept horizontal or vertical line) rectly drawn idence at 30° (± 2°) t 5 cm apart		[1] [1] [1] [1]
Any one from: Thickness of lines (answer must refer to pencil lines, not light rays) Difficulty in reading protractor to better than 2° Thickness of pins				
				[Total: 5]
2	(a) $\theta_R = 23$ °C	3		[1] [1]
	(b) (i) θ_A	= 63 and (ii) θ_H = 14 (unit not required) ecf θ_R from 2(a)	[1]
	(c) (i) $\theta_{\rm B}$	= 36 and (ii) $\theta_{\rm W}$ = 15 (unit not required) ecf $\theta_{\rm R}$ from 2((a)	[1]
	Expect	calculated 4.5 and 2.4 ecf 2(b) and 2(c) NO <u>and</u> ratios too different/not close enough (owtte), from 2(b) and 2(c)	matching stateme	[1] nt ecf wrong [1]
	Initial (\ Amoun	emperature/draughts/humidity/air conditioning (i.e. er water) temperature (cold or hot) t of stirring	nvironmental factor)
Time interval Mass/volume/amount of water/water level				
	Size/su	rface area/material of beaker		[2]
3	(a) Voltme	ter symbol and position correct		[1]
	(b) Pointer	in correct position		[1]
	. , . ,	= 0.84 A, I_2 = 0.33 A, I_3 = 0.50 A, all correct no significate at least once and not contradicted	ant figures penalty	[1]
	(ii) No	mark awarded		
		nsible comment about experimental inaccuracy decirion difficulty in reading meter/scale or meter has a zero	error	[1]

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	(d)	Circuit: correct symbol for variable resistor (not potential divider) Variable resistor in a correct position	[1] [1]
	(e)	Workable solution, e.g. short circuit each in turn/exchange of lamp from other circuit branch/put lamps in parallel and check/use voltmeter to check pd across bulbs plus what is observed	[1]
		[Total	i: 7]
4	(a)	Table: <i>uv</i> values 894, 990, 1090, 1155, 1194. Accept 3 or 4 significant figures. cm ² and cm	[1] [1]
	(b)	Graph: Axes correctly labelled and scales suitable (100 cm² = 2 cm on <i>y</i> -axis and 5 cm = 2 cm on <i>x</i> -axis) All plots correct to ½ small square Good line judgement Thin, continuous line (penalise 'blobs')	[1] [1] [1]
	(c)	(i) Triangle method used and shown Using at least half of line	[1] [1]
		(ii) $f = 14 - 16$ (accept numbers rounding to 14/16) 2 or 3 significant figures and unit	[1] [1]
		[Total:	10]
5	(a)	l value 10.5 (cm) / 105 (mm)	[1]
	(b)	l value 52.5/525 (ecf) Both in cm/mm with unit stated at least once	[1] [1]
	(c)	Use blocks/protractor/set square; move ruler close to bob/lower bob (Can score the mark from a well-drawn diagram)	[1]
	(d)	T values 1.45, 1.47, 1.43, 1.44, 1.46 T values consistent 2 or 3 significant figures Table: cm, s, s	[1] [1] [1]
	(e)	Description: little or no effect (owtte) allow ecf from 5(d) Justification: <i>T</i> values very similar (owtte)	[1] [1]

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(f) Any one from:

Reduces human reaction error
Gives a more accurate <u>value of T</u>
T is too small/oscillations are too quick
Gives an <u>average</u> value (of T)

[1]

[Total: 10]