UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS **GCE Ordinary Level**

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for the guidance of teachers

5054 PHYSICS

5054/31

Paper 3 (Practical Test), maximum raw mark 30

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 must be read in conjunction with the question papers and the report on the examination.

CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the May/June 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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Page 2 Mark Scheme: Teacher GCE O LEVEL – May/J				ers' v /Jun	s' version une 2010				Syllabus			"Par	2	r					
(a)	L r 20.0	measu) cm to	red 0 40.0	to th)cm.	ne ne	eares	t m	m c	or b	etter	with	unit	t ar	nd	in	the	ran	aCal.	nbrid
(b)	Use narr	e of set row ch	t squa anne	ares a I so th	t each iat spł	n end heres	of ch are 1	ianne touch	el to i ning.	take	scale	readiı	ngs/					B1	[1]
(c)	d ca	alculate	ed fro	om <i>L</i> /	20 wit	h unit	t.											B1	
	(Pe	nalise	unit e	error c	nce o	nly in	i (a) a	and ((c))										
	<i>m</i> d of th (ign	etermi ne sph ore un	ined f ere h nit of l	[:] rom ≥ iolder. m)	: 10 sp	ohere	s eith	וer b	y tari	ing th	ie bali	ance (or by	/ find	ding	the	mas	s B1	
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(a)	y≥ with	60.0 c 1 unit.	m (al	low va	alues t	to the	near	rest o	cm) a	and le	ess th	an the	e hei	ght (of th	ie be	ench	B1	[1]
(b)	Set Allo	squar w aligr	e bet າmen	ween t with [,]	floor a vertica	and m al obje	ıetre ∋ct, e	rule. .g. w	indov	w frar	ne or	door f	rame	e or	clan	np st	and.	B1	[1]
(c)	(i)	30 g ±	≤ <i>m</i> ≤	່ 100 ເ	g with	unit.												B1	
	(ii)	<i>t</i> mea 1.0 s	sure ≤ <i>t</i> ≤	d to 0. 5.0 s י	1 s or with u	bette nit.	⊧r, foι	und f	rom 2	≥ 2 re	eadin	gs and	d in r	ang	е			B1	[2]
(d)	Cor	rect ca	alcula	ition o	f <i>a</i> wit	h unit	t (ign	ores	s.f.) a	and ≤	10 m	s ⁻²						B1	[1]
																		[Tot	al: 5]
(a)	<i>d</i> fo (allo	und fro ow 2 cr	om a n) wi	minim th unit	າum of : and ii	f 2 rea n the	ading rang	js to ∣e 1.7	0.1 c 7 cm 1	m or to 2.3	bette 3cm.	r						B1	[1]
(b)	(i)	<i>v</i> to 1	cm d	or bett	er witł	n unit	and	in ra	nge 4	45.00	cm to	80.0c	m.					B1	
	(ii)	D fou range	nd fro 94.00	om a r om to s	ninimu 9.0cm	um of I.	2 rea	adinę	gs to	0.1c	m or l	better	with	uni	t an	d in ⁻	the	B1	[2]
		In pai	ts (a)) and ((b) pe	nalise	e unit	t erro	or ond	ce on	ly.								
(c)	Cor	rect ca	alcula	ition o	f <i>m</i> ar	nd <i>f</i> (iợ	gnore	e uni	t on <i>i</i>	<i>m</i>).								M1	
	f in ⁻	the rai	nge 1	3.0 cn	n to 17	7.0 cm	ז with	า unit	t.									A1	[2]
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Preliminary Results (a) Circuit diagram showing power supply, resistor and capacitor in parallel. If the switch is present it must be between the power supply and the capacitor. B1 (b) V_0 recorded to 0.1 V or better with unit and in range 2.0 V to 6.5 V. B1 (c) V_R recorded to 0.1 V or better with unit and ≤ the value in (b) (within 0.5 V). B1 Penalise unit error once only in (b) and (c). Table (d) Table with units for V_R and t. B1 In awarding the next marks good results should be judged by checking $V_R \pm 0.1$ V from the Examiner's best line. B1 Five good values for V_R B1 Six or more good values for V_R B1 (e) Axes labelled with units and correct orientation. A1 (Allow e.c.f. from wrong unit in table but not no units.) B1 Suitable scale, not based on 3, 6, 7, etc. with data occupying ≥ half the page in both directions. B1 (Allow the graph to start at the origin.) B1 Two points plotted correctly – check the two points furthest from the line. This mark can only be scored if the scale is easy to follow. B1 (Points must be within ½ small square of the correct position.) B1 Best fit fine line and fine points or crosses. B1 (Line thickness to be no greater than the thickest lines on the grid.) B1		er	Syllabus 5054	ge 3	Paç
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Correct calculation 2/3 s.f. (ignore unit). B1	[3]	B1	ather than portrait.)	(Base sho Correct c	
(g) Time correctly read off graph and in range 25s to 70s. B1	[1]	B1		Time corr	(g)