UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS GCE Ordinary Level

MARK SCHEME for the May/June 2011 question paper for the guidance of teachers

5054 PHYSICS

5054/41

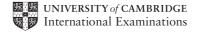
Paper 4 (Alternative to Practical), maximum raw mark 30

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.

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Svllabus Paper

Page 2				Syllabus	Paper		
			GCE O LEVEL – May/June 2011	5054			
1	(a) (i)	capa	acitor is (fully) charged / can hold no more charge		B1	[1]	
	(ii)	Z an	d no resistor / capacitor short circuited / current larges	t	B1	[1]	
	(b) 88	mA ca	90		B1	[1]	
	(c) (i)	scale	s: labels correct way round, labelled quantity and unit es: more than ½ grid, sensible is: 2cm ≡ 10mA x-axis: 2cm ≡ 10s		B1 B1		
		point	ts plotted accurately fit smooth curve neatly drawn		B1 B1	[4]	
	(ii)	as <i>t</i> i	d / exponential	B1	[1]		
	(iii)		mA) seen ± 1.0 / ± 0.10 ecf graph		C1 A1	[2]	
					[Tota	l: 10]	
2	(a) (i)	mea	erse stopper in water/can sure volume/collect water from spout suring cylinder / balance to find mass hence volume		B1 B1 B1	[3]	
	(ii)		neter too small for stopper/object ct not (fully) immersed		B1 B1	[2]	
	(iii)	wait for can to stop dripping before immersing stopper / filled exactly to spout place stopper in without splashing / tie on thread / lower slowly use sensitive measuring cylinder stopper dry before immersing measuring cylinder dry before use use level bench					
			d parallax reading measuring cylinder at and average		B2	[2]	
	(b) (i)	mas	s		B1	[1]	
	(ii)	bala	nce / top-pan balance / beam balance		B1	[1]	
						[Total: 9]	

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Syllabus

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3	(a)	(i)	suitable arrangement of apparatus described or on diagram reads meter / notes weight when just moves	B1 B1	[2]
		(ii)	sensible comment, e.g.: increase force slowly / adds weights gently use same part of bench choice of newton meter described repeat readings to find average string horizontal check for zero error in meter sensible comment on friction over pulley	B1	[1]
	(b)	use	e different sides of the same block	B1	[1]
	(c)	(i)	F/N and W/N	B1	[1]
		(ii)	plot F against W (or W against F) / finds gradient of graph gradient = k (or gradient = $1/k$)	B1 B1	[2]
				[Tota	al: 7]
4	(a)	(i)	straight line from lamp to bench just above/touching top of card	B1	[1]
		(ii)	correct indication of region of shadow	B1	[1]
	(b)	sha	adow becomes longer	B1	[1]
	(c)	mo refl mo ligh	Itiple sources e.g.: on out ections re street lamps its from other sources such as cars/houses ger lamp size	B1	[1]
				[Tota	al: 4]

Mark Scheme: Teachers' version

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