UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS GCE Ordinary Level

MARK SCHEME for the October/November 2008 question paper

5054 PHYSICS

5054/04

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

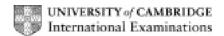
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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

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Page 2		Mark Scheme Syllabus		S Paper	
		GCE O LEVEL – October/November 2008	5054	04	
(a)	21 cad			B1	[1]
(b)	any one	of following:			
	allow ans				
	scale/ruler placed close to tube				
	eye (level)/sight perpendicular to ruler/scale/reading NOT meniscus				
	eye level	with reading/meniscus		B1	[1]
(c)	axes: coi	rect way round, labelled quantity and unit		B1	
	scales: n	nore than ½ grid, sensible, at least three values		B1	
	points: plotted accurately, to ½ smallest square, maximum size 1 mm dots			B1	
	line: best	fit, straight neatly drawn with ruler; allow joints first to	last points	B1	[4]
(d)	pressure	not zero when not in liquid/when $d = 0$ /			
	p = 3 to 6 cm water when $d = 0$ /				
	zero error in reading/measuring pressure /				
	pressure	changed when apparatus assembled		B1	[1]
(e)	d increas	ses (equal amounts) as p increases (by equal amounts	s) /		
	linear rel	ationship / straight line not through 0,0/positive gradier	nt	B1	[1]
		ectly proportional / doubling d doubles p / linearly propional to d	ortional /		
(f)	18.5 to 1	9.5 ecf graph		B1	[1]
	NOT if no	o line through points drawn on graph			
				[Total: 9]

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	Page 3		Mark Scheme	Syllabus	Paper	
			GCE O LEVEL – October/November 2	008 5054	04	
2	(a)	line throu	B1			
		line throu	ugh P_3P_4 with ruler, neat, touching each dot		B1	
		lines pro		B1 [3]		
	(b)	repeat fo	or Q		B1 [1]	
	(c)	mirror lin	e accurately drawn through intersections		B1 [1]	
	(d)	P_3P_4 and	I Q ₃ Q ₄ produced back to meet		B1 [1]	
	(e)	12.5 to 1	4.0 cm to nearest mm unit required		B1 [1]	
	(f)	pins may	s enter paper			
		allow more accurate / pins placed correctly or properly		B1 [1]		
					[Total: 8]	
3	(a)	reading o	on scale not zero when closed / no object		B1 [1]	
	(b)	28 seen	or implied		C1	
		1.28 see	n / 8 seen		C1	
		0.16 c	ao unit not required (0.427 scores 2)		A1 [3]	
	(c)		o use (e.g. no vernier to read/automatic error / quicker to use / more sf or dp or precis	• ,	B1 [1]	
		uses a battery / cell / battery / cell may run out / expensive / too sensitive / readings fluctuate / (circuit) malfunction			B1 [1]	
					[Total: 6]	

	Page 4			Mark Scheme	Syllabus		Paper
				GCE O LEVEL – October/November 2008	5054		04
4	(a)	(i)	dim(mer than normal) / not lit		B1	[1]
			norm	nal brightness / brighter (than A) / bright		B1	[1]
		(ii)	(glov	vs brightly then) blows / filament fuses / melts	1	M1	
			volta	ge / current (too) high / more than working value/6V		A1	[2]
	(b)			resistor / variable power supply / number / voltage of cells drawn or described		В1	
		volt	metei	across lamp / power supply drawn or described		B1	
		star	t with	low V/high R then measure V just before lamp blows		B1	[3]
				no circuit drawn showing lamp and power supply / y drawn symbols / additional incorrectly connected cor	mponents		

[Total: 7]