## **CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**Cambridge Ordinary Level** 

## MARK SCHEME for the October/November 2015 series

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

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		Cambridge O Level – October/November 2015	5054	41
1	(a) N	pole		B1
	(b) (i	) simple means of suspension good practical detail, e.g. string stirrup/at the centre stated		B1 B1
	(i	) means of floating magnet, e.g. place on block of wood/polystyrene/foam/object that floats/on a float		B1
	(c) s	atement + explanation, e.g. water due to (more) friction/resistance		B1
				[Total: 5]
2	(a) (i	) remove excess water/water that has not been absorbed owtte/shakdrops/no drips (on bench)/avoid spillage/remove surface water/to same each time		В1
	(ii	) whole towel would absorb all the water to obtain different values for different volumes/to get a large range of values/to get more results owtte	of	В1
	(iii	) Any one: takes too long to cut squares/do experiment only small amount of water removed each time/do not absorb enoug	gh water	B1
	(b) (i	) axes correct way round, labelled quantity and unit scales linear, sensible points plotted accurately within ½ small square neat crosses or small points (in circle) best fit straight line drawn		B1 B1 B1
	(ii	) $0.49 \pm 0.02$ at least 2 sf ignore unit		B1
	(iii	) furthest point from line/anomalous point/ does not fit on line/does not fit the pattern		B1
	(iv	) $32 \pm 0.5  \text{cm}^3$ unit required		B1
	(c) w	ore	B1	
	В	tatement + explanation to make a fair comparison/experiment/result of the material/to keep tonditions/number does not matter – it is the absorbency that does matter		B1

**Mark Scheme** 

[Total: 12]

Syllabus

Paper

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P	age (	3	Mark Scheme	Syllabus	Paper
			Cambridge O Level – October/November 2015	5054	41
3	(a)	(i)	ray from A to screen through pinhole ray from B to screen through pinhole $17 \pm 2^{\circ}$		B1 B1 B1
		(ii)	use of longer lines, e.g. use of rays on left hand side of pinhole/exon right/measure the angle from both rays/measure angle at both the inter section		В1
		(iii)	ray from A forms bottom of image ora with B/ image is real /rays or cross or intersect/rays of light meet at the pinhole (before the screen		В1
	(b) light from A spread out/diverge on screen/form more than one image/ rays from A do not meet (at a point on screen)				В1
					[Total: 6]
4	(a)	(i)	two values accurately marked and labelled all three accurately marked and labelled		C1 A1
		(ii)	46 mm cao 48 mm cao		
			2 mm cao two correct with at least one unit all three correct with units		C1 A1
		(iii)	Answers in range 17 100 to 17 250 min 2 sf 17 000 mm <sup>3</sup> /17 cm <sup>3</sup>		C1 A1
	(b) vernier/micrometer/calipers/depth gauge ruler (with no dead space) both needed				B1
					[Total: 7]