## **CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**Cambridge International General Certificate of Secondary Education** 

## MARK SCHEME for the October/November 2015 series

## 0652 PHYSICAL SCIENCE

0652/61

Paper 6 (Alternative to Practical), maximum raw mark 60

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1	(a)	(i) (ii)	condenser always filled with water; cools vapour as soon as it enters condenser;	e Bunsen bı	[max 2] urner) ; [2]
	(b)	hex	anol 78 ; rane 69 ; otane 98 ;		[3]
	(c)	(c) (i) the more C atoms/the larger the molecule/the longer the chain/down series the h the boiling point;			
		(ii)	boiling point quoted between 100 and 150;		[1]
	(d)	bpt	pentanol higher than 100/bpt water ;	l	[1] [Total: 10]
2	(a)	star	rch ;		[1]
	(b)	(i) (ii)	burette/pipette/syringe; (dropping) pipette/syringe/burette/dropper; (must be different to the answer to <b>(b)(i)</b> )		[1] [1]
	(c)	57	; 8 ; 4 ;		[3]
	(d)		† (no mark) ause it caused a faster reaction/shorter time/faster ;		[1]
	(e)	(i)	copper;		[1]
		(ii)	copper hydroxide ;		[1]
	(f)	Add	d 1 cm³ water ;	J	1 [Total: 10]

Pa	age 3		Mark Scheme	Syllabus	Paper
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3	(a)	(i)	h = 8.2 ;		[1]
	(	(ii)	B = 4.6;		[1]
	<b>(</b> i	iii)	T = 6.7;		[1]
	<b>(</b> i	iv)	4.6 + 6.7 = 11.3. 11.3/2 = 5.7 ; (ecf) ALLOW 5.65		[1]
	(	(v)	$V = \pi d^2 h/4 = 3.14 \times 5.7^2 \times 8.2/4 = 209/209.2 ;$		[1]
	(b)	(i)	55 ;		[1]
	(	(ii)	$V_2 = 250 - 55 = 195$ ;		[1]
		2. n 3. a	the student cannot tell when the cup is "full" of water OWTTE; neasuring cylinder/scale is not accurate/to 1 cm³; hir bubbles in the water;	Any two	ro.
	,	4. w	varmer/colder affecting density ;		[2]
		Sub OR	otract the masses AND gives volume ;		
			OW subtract masses and divide by the density;		[1]
				I	[Total: 10]
4	(a)	3.6	; 2.2 ; 1.5 ;		[3]
			rable resistor/rheostat ; rect symbol ;		[2]
	(c)	(i)	X/3.6 Y/2.2 Z/1.5 in this order ;		[1]
	(	(ii)	A higher potential difference (voltage) must be applied (to get the shigher resistance OWTTE;	ame curren	t) to a [1]
	(d)	resi	stance of X = 3.6/0.5 = 7.2 (ohms) ;		[1]
	` ,	Wir	e 1 – X e 2 – Y e 3 – Z ;;		
		All	correct 2 marks, 1 correct 1 mark		[2]
				İ	[Total: 10]

Р	Page 4		Mark Scheme 3		Paper
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5	(a)	tub	e dips into water in suitable vessel ;		[1]
	(b)	(i)	(first signs of the) whiteness / milkiness / cloudiness ;		[1]
		(ii)	6.4 ; 7.7 ; 7.0 ;		[3]
		(iii)	7(.0) or 7.03;		[1]
	(c)	7.0	3 × 0.015/25 OR 7 × 0.015/25 OR 0.004218/0.004/0.0042;		[2]
	(d)	OR UI	to blue ;		
			nge/yellow to green/blue/purple; other suitable indicator and correct colour change		[2]
					[Total: 10]
					[
6	(a)	On OR	e student times the 1-metre run and the other times the 2-metre run	;	
			e student releases and other times at 1 m and 2 m;		[1]
	(b)	2.6	s AND 3.5s recorded in correct place;		[1]
	(c)	(i)	1/3.5 = 0.29 (m/s); $2/4.9 = 0.41 (m/s) OR  1/1.4 = 0.71 (m/s)$ (so must have accelerate	ed) ;	
			OR same distance (1m); in less time quoting 1.4 s;		
			OR acceleration correctly calculated ;		[2]
		(ii)	height = 2 cm. average speed = 0.41 (m/s); height = 4 cm, average speed = 0.57 (m/s); height = 5 cm, average speed = 0.65 (m/s);		[max 2]

Mark Scheme

Syllabus

**Paper** 

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(d) since acceleration due to gravity is independent of mass; The results will be the same;

OR

More friction;

slower; [2]

(e) (speeds too great) difficult to measure time/reaction time now significant; [1]

(f) (grav.) potential energy to kinetic energy; [1]

[Total: 10]