CAMBRIDGE
INTERNATIONAL EXAMINATIONS

DGE AMINATIONS

## **NOVEMBER 2002**

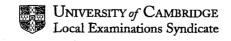
## INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK : 60

SYLLABUS/COMPONENT: 0652/2

PHYSICAL SCIENCE (CORE)



Page 1	Mark Scheme	Syllab	S.	
	IGCSE Examinations – November 2002	0652	100	

Cambridge.com Approximately correct (by eye) to mirror 2 1 (a) Approximately correct (by eye) from mirror 2 2 (For both marks a ruler must be used) (b) i correctly marked angle of incidence = angle of reflection (accept 'same') (c) suitable suggestion (d) (e.g. looking over heads at golf match, submarine, etc.) Total 5 decreases (not just less reactive\* but accept longer time) 2 (a) (i) decreases (not just less reactive\* but accept longer time) (ii) 3 increases (not just more reactive\* but accept shorter time). (iii) \*but penalise once only (b) Test: use of limewater 2 Result: goes cloudy / milky Total 5. Jack March acceleration, building up / increasing speed 1 (a) +1 constant / uniform constant speed / accept no acceleration 3 (ii) 1 Recognition that distance travelled = area under graph (b) OR distance travelled = ½ max speed x time 1 insertion of correct values ( ½ x 10 x 3) 1 1 3 correct value (15) (Use of 10 x 3 with final answer 30 ... 1 max) [Calculation of total area under graph with  $0 \rightarrow A$  correct give 2 max] (c) 6 m/s

Total 7

Page 2	Mark Scheme	Sylia	· A	- er
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	Pa	ige 2	Mark Scheme Syll	7. D. er
			IGCSE Examinations – November 2002 065	2 %
				S.
				MAK.
				A. P. A. P. C. A. P. C. COM. 1 2
				36
4	(a)	(i)	12	18.
	• -	(ii)	2 8 2 (all three) ecf	1 2
		• •		
	(b)	(i)	copper, magnesium, sodium	1
	• -	(ii)	potassium, rubidium, caesium or francium	
		-	(accept correct symbols) ANY ONE	1 4
		(iii)	oxides of metals	
			react with acids	
			to form salts	
			form alkali when reacts with water ANY 2	2 <b>4</b>
•				Total 6
5	(a)		Diagram correctly completed	2 <b>2</b>
	• •		(voltmeter connected in parallel with incorrect component(s) 1)	
	(b)	(i)	R = V/I or substitution of correct values	1
			R = 5	· 1
		(ii)	ohm or $\Omega$	1 3
		• -		
	(c)		15 ( $\Omega$ ) or ecf (no unit penalty)	1 <b>1</b>
	(-,		10 (32) of co. (iii) distribution,	' '
	(d)		V = IR or correct substitution ecf	4
	(u)	•	V = 12 (V)	1 2
			V = 12 (V)	<u> </u>
				Total 8
				i Otai G
6	(a)	(i)	Na loses one electron (to form an ion)	1
_		('')	CI gains one electron (to form an ion)	1 2
	•	٠	(Na gains electrons and C <i>I</i> loses electrons give 1)	' <b>-</b>
		(ii)	oppositely charged ions attract	1
		77	strongly or strong bonds / forces	1 2
	12			•
	(b)		add (dilute nitric acid then) aqueous silver nitrate / lead nitrate	1
	(~)		white precipitate forms	+1 2
			(not accept bleaching)	., 2
			(	Total 6

Page 3	Mark Scheme	Syllabi	3
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			- V

	Pa	ige 3	Mark Scheme Syllab.	· S		
			IGCSE Examinations – November 2002 0652	Do		
					ambrio	de.com
7	(a)	(i)	any idea that it stops betas going straight to detector	1		G.C.
-	ν,	(ii)	Geiger Mueller tube or other suitable / photographic film / solid state	1		On
		(iii)	background radiation / radiation from earth or sun etc.	1	3	
	(b)		use tongs to handle / do not point at anyone / lead screening / clothes NOT just protective clothes / photo film badge	1	1	1
	(c)		alphas very short range	1		
	(-,		air would absorb them / lose energy quickly / cause much ionisation	1	2	•
	(d)	(i)	mass of alphas greater than betas	1	. 1	
	(-/	(ii)	mention of charge	1		
		` ,	on alphas opposite to betas	1	2	
	(e)		no charge on gamma rays / gammas are e-m waves	1	1	
				Tota	I 10	•
8	(a)	(i)	(12 x 20) + (1 x 42) (12 x 6 + 1x42 scores zero)	1	<b>~</b>	
	( ,	( )	282 (ignore unit)	1		
		(ii)	C <sub>21</sub> H <sub>44</sub>	1		
		(iii)	alkane (series) not paraffins	1		
			test: add bromine (water) or pot. (per) manganate (VII)	· 1		
			result for alkanes: no change in colour	+1		
			result for alkenes: goes colourless (not clear / transparent)	+1	7	
	(b)	(i)	1. water (accept steam or H <sub>2</sub> O) (1)		·	
	ă»:		2. carbon monoxide (accept CO) (1) Any 3			
	42.2.1		3. carbon dioxide (accept CO <sub>2</sub> ) (1)		_	
		1.	4. carbon (not soot) (1)	3	3	
		(ii)	idea that only liquid wax will soak up the wick / fuel to keep wick burning	1	1	
		(iii)	candles made from C <sub>20</sub> H <sub>42</sub> may sag / bend / melt	1	•	
			C > 20 gives a higher melting point	1	2	

Total 13