CAMBRIDGE
INTERNATIONAL EXAMINATIONS

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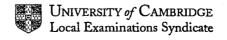
NOVEMBER 2002

INTERNATIONAL GCSE

WARK SCHEME

MAXIMUM MARK : 100

SYLLABUS/COMPONENT: 0654/2 CO-ORDINATED SCIENCES (CORE)



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1	Mark Scheme IGCSE Examinations – November 2002	Sylla 0654	
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			SAM
		. '	The state of
1(a)	the community / all the living things;		Cambridge Com
. /	+ the habitat / all the non-living things;		On
(b)(i)	blackjack/cotton plant ▶ aphid ▶ ladybird ▶ pied	wagtail;	1
くつしわ	oraniani anno akana mahaya kana	<i>,</i>	
(ii)	cotton plant/blackjack;		1
(11)		·	
(c)(i)	sunlight;		
(c)(i)	photosynthesis/description of photosynthesis;		2
	photosynthesis description of photosynthesis,		 ·
(22)	ioskal aata rakkit .		
(ii)	jackal eats rabbit;		2
	energy is (stored) in food / chemical energy;		2
(iii)	black shouldered kite;	1	^
	energy lost along food chains / kite is at end of food c	enain;	2
2(a)	gravity downwards in both;		2
	tension upwards in fig C;		4
(b)	stage B;		
(3)	greatest velocity so greatest KE;		2
(c)	straight line;		2
	through origin;		-
3(a)	В;		
	A;		3
	D;		
(b)(i)	formed over a very long time scale;		2
· /\-/	from once living material;		2
· · · ·	biogas contains carbon dioxide (as well as methane);		
(ii)	biogas contains carbon dioxide (as well as methale), carbon dioxide does not burn / less combustible mate	rial	
	in biogas so less heat evolved / owtte;		2
		٠ ا مخسور م	marc.
(c) , · · ·	reference to (large chain) molecules made of repeating	g units / mono	neating: 2
	which soften / melt when heated / can be repeatedly r	ermoninen oå i	manne, =

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MAX 2
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(b)(i)	transition;	36
(ii)	reference to physical differences e.g. copper has higher fixed points / harder / stronger reference to chemical properties copper less reactive / forms coloured compounds / acts as catalyst; MAX	1
(c)(i)	→ copper + carbon dioxide / monoxide;	1
(ii)	reference to mass of oxygen lost /copper oxide has the mass of oxygen in it copper does not / owtte;	1
7(a)(i)	vibrate more/faster /have more KE; particles move further apart;	2
(ii)	particles vibrate more at hot end; KE /energy passed by collision from one particle to the next;	2
(b)	strong attractive force between atoms	1
(c)	400 J/kg/°C; doesn't depend on mass;	2
(d) .	energy supplied used to weaken bonds; to allow particles to separate;	2
9/3)	cell membrane;	
8(a)	controls what goes in and out of the cell;	2
(b)(i)	line to nucleus;	1
(ii)	sperm will fuse with/fertilise egg; to restore 46 chromosomes;	2
(iii)	genetic material / genes; instructions for making proteins/determine characteristics of cell;	2

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(c)(i) testes; controls puberty in males/any correct stated secondary (ii) sexual characteristic; 9(a) paper; ceramics; steel; glass; atoms of different elements bonded in compound not in mixture/ (b)(i) elements retain properties in mixture and not in compound/ mixture has variable composition compound has formula/ often easier to separate elements in mixture; 1 increase pressure; (ii) 2 reduce temperature; 1 components have different boiling points; (iii) 1 speeds up reaction; (c)(i)nitrogen molecules very stable / unreactive / held by strong bonds; (ii) 1 100W: 10(a) 1 less resistance(brighter bulb/more current); (b) electrical; (c) into heat; 3 and light; (d) name; 2 use;

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a Cambridge.com 11(a)(i) iodine (solution); starch present inside tubing but not outside; (ii) starch molecules too big to get through membrane; glucose present inside tubing and outside; (iii) glucose diffuses through membrane; breaks down/digests starch; (b) to maltose; 1 12(a)(i) 7; pH increases; (ii) potassium hydroxide neutralises the acid; temperature increases; because the reaction is exothermic / gives out heat (energy); 4 2 → potassium chloride; + water; (iii) bubbles / effervescence; (b) 2 reaction produces carbon dioxide;

2

2

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