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CAMBRIDGE INTERNATIONS

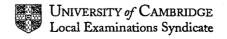
**NOVEMBER 2002** 

## **INTERNATIONAL GCSE**

WARK SCHEME

MAXIMUM MARK 9 400

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



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Mark Scheme Page 1 **IGCSE Examinations – November 2002** 

WWW. Papa Cambridge.com the community / all the living things; 1(a) + the habitat / all the non-living things; blackjack/cotton plant ► aphid ► ladybird ► pied wagtail; 1 (b)(i) 1 cotton plant/blackjack; (ii) (c)(i)sunlight; 2 photosynthesis/description of photosynthesis; jackal eats rabbit; (ii) 2 energy is (stored) in food / chemical energy; black shouldered kite; (iii) energy lost along food chains / kite is at end of food chain; 2 gravity downwards in both; 2(a) 2 tension upwards in fig C; (b) stage B; 2 greatest velocity so greatest KE; straight line; (c) 2 through origin; 3(a) B; 3 D; formed over a very long time scale; (b)(i) 2 from once living material; biogas contains carbon dioxide (as well as methane); (ii) carbon dioxide does not burn / less combustible material 2 in biogas so less heat evolved / owtte; reference to (large chain) molecules made of repeating units / monomers; (c) ... which soften / melt when heated / can be repeatedly remoulded by heating; 2

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radicle; 4(a)(i) cotyledon 1 (ii) ovule; warm temperature needed; (b)(i) 2 light not needed; greener/more starch; (ii) because more chlorophyll/photosynthesis; leaning towards light; positive phototropism / plant shoots grow towards the light; MAX2 250 MJ; 5 (a)(i) 1 (ii) lost as (waste) heat/sound etc; 1 (iii) 100MW; 1 (b)(i) cleaner/less pollution; fossil fuels have other uses apart from burning; MAX 2 fossil fuels are running out/non renewable; (ii) source; description; 2 (c)(i) transformer; 1 (ii) reduce energy losses; 1 6(a)(i) 29; 48; 29; 1;

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

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	Tall	
		37:
		So
(c)(i)	testes;	.60
(-)(-)	Mark Scheme Sylvano IGCSE Examinations - November 2002 06s testes ;	1
(ii)	controls puberty in males/any correct stated secondary	
(1)	sexual characteristic;	1
the state of the s		and the second s
9(a)	paper;	
	ceramics; steel;	
	glass;	. 4
	and the second not in mixture/	
(b)(i)	atoms of <u>different</u> elements bonded in compound not in mixture/ elements retain properties in mixture and not in compound/	
	mixture has variable composition compound has formula/	
	often easier to separate elements in mixture;	1
(ii)	increase pressure; reduce temperature;	2
•		
(iii)	components have different boiling points;	1
( ) ( ) ·	1	1
(c)(i)	speeds up reaction;	
(ii)	nitrogen molecules very stable / unreactive / held by strong bonds;	1
10(a)	100W;	1
(b)	less resistance(brighter bulb/more current);	1
(c)	electrical;	
	into heat; and light;	3
	was any	

(d)

name;

use;

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			DaCambi.
	11(a)(i)	iodine (solution);	
	(ii)	starch present inside tubing but not outside;	
		starch molecules too big to get through membrane;	
	(iii)	glucose present inside tubing and outside;	
	(111)	glucose <u>diffuses</u> through membrane;	
	(b)	breaks down/digests starch;	÷.
	. •	to maltose;	

12(a)(i) 7;

(ii)

(iii)

(b)

pH increases;

temperature increases;

potassium hydroxide neutralises the acid;

→ potassium chloride; + water;

bubbles / effervescence; reaction produces carbon dioxide;

because the reaction is exothermic / gives out heat (energy);