

## **NOVEMBER 2002**

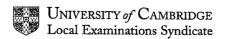
## **INTERNATIONAL GCSE**

## **MARK SCHEME**

**MAXIMUM MARK: 60** 

SYLLABUS/COMPONENT: 0653/2

COMBINED SCIENCE (CORE)



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1(a)	B - battery /cells /cell ; C - switch;	2
(b)	correct symbol for ammeter; in series with lamp; (ignore missing variable resistor)	2
(c)	amperes (accept amps);	1
(d)	socket overloaded / would overheat; break in insulation; reference to consequence e.g. shock / fire; (accept loose wire on the "white" cable cable clips missing)	2max
2(a)	gas given off; oxygen; (accept left with the water only if clear implication of O₂ gone) oxygen is released (into atmosphere) scores 2	2
(b)	faster rate of reaction / higher frequency of (relevant) collisions; when liver has larger surface area;	2
(c)	mass would not change / there would be no reaction / nothing would hap catalase / enzyme, denatured / destroyed / deformed / broken down;	pen; 2
3(a)	Q P S:;:	3
(b)(i) (ii)	R; oil is too complex a mixture / properties not fit for any single purpose, (crude) oil not useful (without processing); fractional distillation separates useful substances from oil / owtte; individual substances are important / named correct example of a fractionuse:	1 n and its 2max

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4(a)(i)	(something) vibrating;	1
(ii)	sound travels through medium/air; by (a series of) vibrations/ compressions and rarefactions; by air (molecules) vibrating scores 2	2
(b)	sound waves need medium / cannot be transmitted if no air; no air on the moon / in space; radio waves do not need medium/ can travel through vacuum;	2max
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5(a)	P to roots; Q to flower;	2
(b)(i)	chlorophyll;	1
(ii)	changed to starch; and stored / saved; (glucose stored scores 1)	2
(c)	dye taken up / absorbed / by diffusion (but not directly into leaf); into the xylem / transported in xylem / and coloured the xylem; into vascular bundles / veins in leaves; (ignore any references to the mechanism of osmosis)	2 max
6(a)(i)	compound; made of hydrogen and carbon (only); (mixture of H and C = 0) (compound made of H and C molecules = 1)	2
(ii)	poly(ethene) made from linked ethene molecules; reference to long chain molecule compared to single unit; poly(ethene) molecule contains many more atoms than ethene; (reject simple reference to bigger molecule)	2max
(b)	oxygen required for burning; reference to removal of air / oxygen; reference to the water cooling the fire;	2

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7(a)	D; B; F;	3
(b)	oviduct / fallopian tube ; zygote ;	2
(c)	using a condom / sheath / femidom; abstinence / avoiding infected partner;	2
8(a)	10000;	1
(b)	4.5;	1
(c)	density = mass/volume; =10000/4.5; =2222; (ignore any recurring decimals and allow ecf from (a))	3
(d)	work = force x distance; = 100,000 x 140; = 14,000,000; (allow ecf from (a))	3
9(a)(i)	B; A; C;	3
(ii)	limewater; cloudy;	2
(b)(i)	increases/goes up/gets higher; (reject it goes neutral)	1
(ii)	nickel sulphate + water;;	2