

**MARK SCHEME for the May/June 2009 question paper
for the guidance of teachers**

0654 CO-ORDINATED SCIENCES

0654/05

Paper 5 (Practical), maximum raw mark 45

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Page 2	Mark Scheme: Teachers' version	Syllabus
	IGCSE – May/June 2009	0654

- 1 (a) readings reasonable (clearly in mm) and entered correctly in column for tissue **A** ;
readings reasonable and entered correctly in column for tissue **B** ;
value for 5 mins in **A** must not be greater than 80 mm
- (b) points plotted accurately for tissue **A** ; allow 1 error
smooth curve drawn through points ;
points plotted accurately for tissue **B** ; allow one error
smooth curve drawn through points ; [4]
- (c) (i) liver/tissue **C** ;
fastest **rate** of production of oxygen ; OWTTE [2]
- (ii) animals liver has many chemical reactions/produce more hydrogen peroxide ;
therefore it is removed more rapidly/it is removed before poison build up ; [2]
- (d) (i) 82 mm ;
- (ii) 8 mm ; [2]
- (e) hydrogen peroxide is running out/has been converted/concentration is falling ; [1]
- (f) leave detergent out of reaction tube (1) ;
collect gas in a measuring cylinder over water or syringe (1) ; [2]
- [Total: 15]

2 (a), (b) (i) (ii) Table

- 5 sets for **h** and **V** ; **h** clearly in mm
1st value of **h** is between 20–40 mm ;
last value of **h** is between 100–140 mm ; [3]
- (c) $100 - V$ is correct ; do not award if **V** is incorrect [1]
- (d) axes correctly labeled ;
scale ;
plotting ; allow one error
line ; ignore use of origin [4]
- (e) show how found ; allow if both figures are written down and correct
correct evaluation on candidate's figures ; [2]

Page 3	Mark Scheme: Teachers' version	Syllabus
	IGCSE – May/June 2009	0654

(f) correctly evaluated to at least 1 dp but no more than 2 dp ;
accuracy on V_w corrected if necessary ; value between 20–23

(g) wind string around tube & measure ;
winding several times ;
circumference to diameter ;

[3]

[Total: 15]

3 (a) red, brown or similar ; allow black if recognizes some brown particles

[1]

(b) (i) black residue ; if (a) is black then allow black or no change

[1]

(ii) dissolves ;
green solution ;
turns blue ;

[3]

(c) (i) red brown ;
filtrate is blue ;

[2]

(ii) khaki colour (colour similar to khaki) accept yellow/green etc ;
white or grey ppt. ; milky is allowed

[2]

(iii) brown/black solid ;
colour fades to colourless or lighter blue, allow 'fizzing' ;

[2]

(d) brown fumes or notes brown solid ;
dissolves ;
blue solution ;

[3]

(e) copper (do not allow 2^+ oxidation state) do not allow any copper compound ;

[1]

[Total: 15]