

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

0653 COMBINED SCIENCE

0653/05

Paper 5 (Practical Test), maximum raw mark 30

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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- 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 one 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 ; [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]
- [Total: 10]**

- 2 (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) black/brown solid ;
colour fades to colourless or lighter blue, allow fizzing ; [2]
- (d) copper (do not allow 2^+ oxidation state) do not allow any copper compound ; [1]
- [Total: 10]**

- 3 (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 ; assumes **V** is correct [1]
- (d) plotting ; allow one error
line ; [2]

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- (e) show how found ;
evaluation from candidates figures ;
- (f) correctly evaluated to at least 1 dp and not more than 2 dp;
accuracy on corrected figure if necessary, allow 20–23 mm;

[2]

[Total: 10]