UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

0653 COMBINED SCIENCE

0653/53 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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UNIVERSITY of CAMBRIDGE
International Examinations

1 (a) (i) green ;
chlorophyll ; [2]

(ii) **A**: blue-black / black / blue / violet ;
B: brown / orange / yellow ;
starch present in **A** **AND** starch absent in **B** ; [3]

(b) (i) to soften leaf / to kill leaf ; [1]

(ii) to prevent alcohol from igniting ; [1]

(iii) photosynthesis occurred in leaf **A** ;
due to light ;
making starch / making glucose ;
(or reverse argument for leaf **B**) [3]

[Total: 10]

2 (a) (i) **V** and **I** reading for 20 cm, **AND V** and **I** same order of magnitude as supervisor, **AND V** greater than **I** ; [1]

(ii) **V** and **I** reading for 40 cm, **AND V** greater than **I** ; [1]

(iii) **V** and **I** readings for 60, 80 and 100 cm ;
V increases and **I** decreases down the table ; [2]

(iv) all **R** values calculated for 5 or 4 sets of readings to same number of decimal places ; [1]

(b) (i) *points*: 4 points plotted correctly within ½ square ;
line: best straight line passing through (0,0) within ½ square ; [2]

(ii) working shown on graph or below graph ;
gradient calculated correctly ; [2]

(iii) cross-sectional area, **C** calculated correctly to 2 significant figures ; [1]

[Total: 10]

3 (a) (i) *residue*: green ;
filtrate: colourless ; [2]

(ii) *observations*:
bubbles / fizzes / effervesces ;
conclusion:
carbonate / CO_3^{2-} ; [2]

(iii) *observation*:
blue ppt ;
conclusion:
copper / Cu^{2+} / Cu(II) ; [2]

(b) (i) *observation*:
white ppt ;
conclusion:
chloride / Cl^- ; [2]

(ii) *observation*:
no change ;
conclusion:
not sulfate / not SO_4^{2-} ; [2]

[Total: 10]