

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 series

0653 COMBINED SCIENCE

0653/51

Paper 5 (Practical Test), maximum raw mark 30

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- 1 (a) outline concave on one side ;
projections on the other side ; [2]

(b) (i)

| test solution | observation |
|--------------------|---|
| Benedict's reagent | green/yellow/orange/red ; |
| biuret solution | blue / no change / colour stays the same ; |
| iodine solution | brown / orange / no change / colour stays the same ; |

[3]

- (ii) reducing sugar / glucose ; [1]
(**NOT** sugar. **DO NOT ALLOW** additional food groups)

- (c) (i) several small circles labelled 'stained' or 'coloured' or (c)(i) or red ; [1]



- (ii) water transport ; [1]
(**ALLOW** water and any idea of movement, 'absorbs water' is not enough)

- (d) different temperatures in separate experiments ;
time for coloured water to appear at top of cut stem / set time and measure distance moved ;
all other conditions / named condition kept constant ;
(if one experiment proposed with gradual increase in temperature then can only score 2nd marking point) [max 2]

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- 2 (a) (i) white ppt/milky/cloudy white ; [1]
- (ii) blue/purple **AND** pH value in range 8–14 ; [1]
- (iii) calcium oxide / CaO ;
(**ALLOW** quicklime / limewater / calcium hydroxide / Ca(OH)₂) [1]
note: accept answer if seen in (iv)
- (iv) base/basic/alkali/alkaline ; [1]
- (b) (i) blue (and white) ppt. ; [1]
- (ii) blue (and white) ppt. ;
(some) ppt dissolves soluble in excess (ammonia) ;
to form darker blue (solution) ; [3]
- (iii) Cu²⁺ / Cu(II) / copper (**not** Cu) ;
copper oxide / CuO ;
note: both marks depend on 'blue' being reported in (b)(i) or (b)(ii) [2]
- 3 (a) all *t* values present and increasing ;
- (**ALLOW** 0:12 format)
- T* values correct minimum 2 sig. fig. ;
- (if 0:12 format used for *t* then *T* = 12/20 **NOT** 0.12/20)
(**ALLOW** ecf from *T*)
- T*² values correct **AND** to 2 sig. fig. ; [3]
- (**ALLOW** ecf from *T*)
- (b) (i) suitable choice of scales from (0,0) using at least half of each axis
(*m* likely to be 0.1 per 2cm) ;
- at least three plots correct to ± ½ small square ;
- good best-fit straight line judgement ; [3]
- (if **non-linear** then do not award scale, plot or line marks **EXCEPT** if non-linear region is just between 0 and 0.2 kg then do not award scale mark)
- (ii) indication on graph of how data obtained **AND** ≥ half the line used ;
- correct calculation using data from graph ; [2]
- (iii) correct calculation of *k* to 2/3 sig. fig. and correctly rounded ; [1]
- (c) eye level with **top** / **bottom** / **middle** of oscillations / equivalent ; [1]