

MARK SCHEME for the October/November 2014 series

0653 COMBINED SCIENCE

0653/52

Paper 2 (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.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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- 1 (a) full set of results (colours) recorded for tube **A** ;
full set of results (colours) for tube **B** ;
correct trend for tube **A** (later samples are brown/orange) ; (*check Supervisors results*)
correct trend for tube **B** (all blue-black) ;
- (b) amount of starch reduces / no starch by end of experiment ;
brown colour appears when no more starch present ;
starch (is) digested / starch (is) broken down by the amylase ; [3]
- (c) (i) starch is still present ; [1]
- (ii) amylase is, denatured / not working / inactive ;
starch is not broken down ; [2]
- [Total 10]
- 2 (a) (i) initial temperature of **P** recorded to nearest 0.5°C; [1]
- (ii) sensible final temperature of **P** (*expect increase of 2–4 °C*) ; [1]
- (iii) sensible final temperature of **Q** (*expect decrease of 1–2°C*) ; [1]
- (b) both temperature changes correct (ignoring signs) ;
both signs correct ; [2]
- (c) (i) blue ppt. ;
dark blue solution / deep blue solution / purple solution ;
copper / Cu^{2+} / copper(II) ; (*depends on observation of blue*) (**not Cu**) [3]
- (ii) sodium hydroxide solution **AND** blue ppt. ; [1]
- (iii) white ppt. **AND** chloride ; [1]
- [Total: 10]

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- 3 (a) (i) sensible l_0 (check Supervisors values) recorded to the nearest millimetre ;
(ii) values of m (100 g) and l present in the table ;
(iii) extension calculated correctly (for 100 g) ; [1]
(iv) all readings present of mass and length present ;
all lengths increasing down the table ;
all extensions correct ; [3]
- (b) suitable choice of linear scales ;
4 points plotted correctly to $\pm \frac{1}{2}$ small square ;
good best fit straight line judgement through origin ; [3]
- (c) (directly) proportional ; [1]

[Total: 10]