MARK SCHEME for the October/November 2014 series

0652 PHYSICAL SCIENCE

| 0652/51 | 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.

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

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1 (a) *filtrate:* colourless ;
residue: brown / black / grey ;
(if colours reversed 1 mark max) [2]

(b) (i) white ppt. ;
ppt. disappears to form colourless solution / ppt. soluble in excess (NaOH) ; [2]

(ii) white ppt. ;
ppt. disappears to form colourless solution / ppt. soluble in excess (ammonia
solution) ; [2]

(iii) Zn^{2+} / zinc ; (**not** Zn)
(this mark is linked to a correct observation in **(b)(i)** *or* **(b)(ii)***)* [1]

(c) (i) bubbles / effervescence ; *(ignore colours)* [1]

(ii) *filtrate:* green / turquoise / blue ;
residue: brown / black / grey ;
(if colours reversed 1 mark max) [2]

(d) (i) (pale) blue ppt. ; [1]

(ii) (pale) blue ppt. ;
dark(er) blue solution / deep blue solution / purple solution ; [2]

(iii) Cu^{2+} / copper ; *(independent mark)* (**not** Cu) [1]

(e) add dilute sodium hydroxide / ammonia solution **AND** brown / orange ppt. ; [1]

[Total: 15]

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2 **(a)** **(i)** all three values present with l = 10 cm and I less than 1 ; [1]

    (ii) R value correct for l = 10 cm and minimum of 2 significant figures ; [1]

    (iii) all units present and correct (A, V, Ω **OR** amps, volts, ohms) ; [1]

    (iv) all I approximately the same ;
all V to at least 1 d.p. ;
V values increasing (for increasing length) ;
R values correct for l = 25 cm onwards ;
consistent two or three significant figures for R ; [5]

    (v) so that the wire does not become hot / because resistance of wire may increase / as battery or cell may run down ; [1]

(b) axes labelled with units (allow ecf from **(a)(iii)**) ;
suitable choice of linear scales and use of at least 50% of each axis ;
*(no marks may be awarded beyond this point in **(b)** for a non-linear scale)*
at least four plots correct to ± ½ small square ;
good best fit straight line judgement ; [4]

(c) *relationship*: proportional ;
justification: straight line ; [2]

[Total: 15]