



PHYSICAL SCIENCE

0652/51

Paper 5 Practical Test

October/November 2016

MARK SCHEME

Maximum Mark: 30

Published

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Question	Answer	Mark
1(a)	<p>cation</p> <p>add sodium hydroxide solution / NaOH AND green ppt. ; (ALLOW gas changes red litmus to blue)</p> <p>iron(II) / Fe²⁺ ; (DO NOT ALLOW ammonium if alternative observation given because ammonium given in question)</p> <p>anion</p> <p>add barium nitrate (solution) / Ba(NO₃)₂ AND white ppt. ; ALLOW barium chloride</p> <p>sulfate / SO₄²⁻ ;</p>	4
1(b)(i)	<p>colourless solution ; fizzing / bubbles / effervescence ; lighted splint pops ; hydrogen / H₂ (depends on use of splint) ;</p>	4
1(b)(ii)	<p>white ppt. ; ppt. dissolves / <u>becomes</u> colourless solution ;</p> <p>(element L is) zinc / Zn ; independent mark</p>	3
1(c)(i)	<p>observations: effervescence / bubbles / fizzing / gets hot ;</p> <p>filtrate: colourless / <u>paler</u> green ;</p>	2
1(c)(ii)	<p>white ppt. / faint ppt. / milky / no ppt. ;</p>	1

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Question	Answer	Mark
1(d)	displacement/redox/cation reduced / Fe^{2+} goes to Fe / Fe^{2+} disappears / (cation) reacted ;	1
	Total:	15

Questions	Answer	Mark
2(a)(i)	l present to the nearest millimetre AND 60.0 ± 0.2 ;	1
2(a)(ii)	appropriate precaution (either written or shown on diagram): take reading at eye level/use of set square to ensure rule vertical/use of fiducial aid/place ruler close to pendulum ;	1
2(b)(i)	time recorded to 1 decimal place ; sensible time = $31 \text{ s} \pm 0.5$ (accuracy mark) ;	2
2(b)(ii)	time recorded and less than that in (i) ;	1
2(b)(iii)	all time values recorded with pattern of decreasing times ;	1
2(c)(i)	T values calculated correctly (ignore no. of decimal places) ;	1
2(c)(ii)	complete set of T^2 values recorded, correctly rounded to 1 decimal place ;	1
2(d)(i)	suitable choice of scales (more than half the grid used) AND from (0,0) ; at least 4 plots correct to $\frac{1}{2}$ small square ; good best-fit straight line judgement ;	3
2(d)(ii)	triangle method indicated on graph AND more than half the line used ; correct calculation from graph ;	2
2(e)	9.8 ± 0.3 (accuracy mark) ;	1

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Question	Answer	Mark
2(f)	yes agree – values close enough allowing for experimental error OR no disagree – difference too large to be attributed to experimental error ;	1
	Total:	15