



CO-ORDINATED SCIENCES

0654/51

Paper 5 Practical Test

October/November 2017

MARK SCHEME

Maximum Mark: 45

Published

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Question	Answer	Marks
1(a)	time / s ;	1
1(b)(i)	result for 4% recorded ;	1
1(b)(ii)	full set of results recorded ; in whole seconds for all readings present ; increases in time down the table ;	3
1(c)	3 and 2 ;	1
1(d)(i)	axes labelled with units ; suitable linear scale using at least half the grid ; all 4 points correctly plotted \pm half small square ; best-fit straight line ;	4
1(d)(ii)	correct reading from graph \pm half small square ;	1
1(d)(iii)	decreasing concentration increases time ORA ;	1
1(e)(i)	all temperatures below between 0 and 100 inclusive ; at least 3 between 10 and 50 inclusive ;	2
1(e)(ii)	two from: volume of milk ; same type of milk ; pH ; concentration of enzyme ; volume of enzyme ; level of clarity ;	1

Question	Answer	Marks
2(a)(i)	both temperatures recorded AND $T_2 > T_1$; temperature recorded to the nearest 0.5 °C ; white mixture (not solution) / milky ;	3
2(a)(ii)	blue / purple and 10–12;	1
2(a)(iii)	milky / white ppt ;	1
2(b)(i)	blue ppt ; dark(er) blue solution ; (J is) copper (nitrate) ;	3
2(b)(ii)	(slight) blue ppt. / blue solid ;	1
2(c)(i)	temperature change and sign ;	1
2(c)(ii)	exothermic ;	1
2(c)(iii)	sodium hydroxide ;	1
2(c)(iv)	basic / alkaline ;	1
2(c)(v)	(H is) calcium (oxide) ; H + water gives limewater for CO ₂ test in (a)(iii) / F is limewater / calcium oxide reacts exothermically with water / H and water has pH > 7 ;	2

Question	Answer	Marks
3(a)(i)	V and I recorded in table for 0 cm ; $V < 2.5$ V and $I < 1.0$ A ;	2
3(a)(ii)	all values recorded ; V values decreasing ; I values decreasing ; either V to at least 1 d.p. or I to at least 2 d.p. ;	4
3(b)	there is an ammeter reading / current still flowing ;	1
3(c)(i)	all resistance values correct and correctly rounded ; all resistance values consistently to 2 or 3 significant figures ;	2
3(c)(ii)	to prevent wire getting hot / resistance of wire changing / cell running down ;	1
3(d)(i)	W / J per s;	1
3(d)(ii)	all power values correct ; power values decreasing ;	2
3(e)	no / yes (to match results) and actual values used to show relationship / reference to how P changes with I ; doubling I does not double P (for no) / doubling I doubles P (for yes) or P / I not constant (for no) or P / I constant (for yes) ;	2