
CO-ORDINATED SCIENCES

0654/53

Paper 5 Practical Test

October/November 2017

MARK SCHEME

Maximum Mark: 45

Published

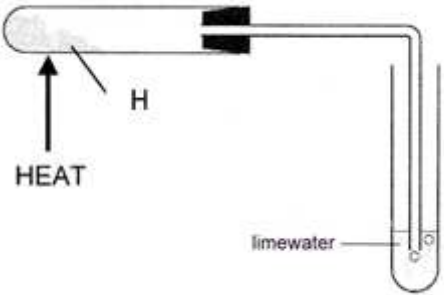
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, 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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Question	Answer	Marks
1(a)(i)	four readings ; to the nearest 0.1 cm ; decreasing ;	3
1(a)(ii)	cm ² and cm ;	1
1(b)(i)	axes correctly labelled with units ; suitable linear scale using at least half the grid ; all 4 points plotted correctly \pm half small square ; best-fit straight line through origin ;	4
1(b)(ii)	more enzyme faster reaction ORA ;	1
1(b)(iii)	correct reading from graph ; lines on graph to show working ;	2
1(c)	glowing splint and relights;	1
1(d)	any two from: temperature ; pH ; pieces from same potato ; concentration of peroxide ;	2
1(e)	only cells on the outside of the potato are in contact in the peroxide ;	1

Question	Answer	Marks						
2(a)(i)	 <p>either H or limewater label required ;</p>	1						
2(a)(ii)	<p>(H) turns yellow (solid) ; white when solid cools ; (limewater) milky / white ppt. ; goes colourless / ppt. dissolves / ppt. disappears / less ppt. ;</p>	4						
2(b)(i)	bubbles / effervescence / colourless solution ;	1						
2(b)(ii)	white ppt. ; ppt. dissolves / ppt. disappears / forms colourless solution (from ppt.) ;	2						
2(c)	(H is) zinc ; carbonate ;	2						
2(d)(i)	<p>grid with all entries (as below) ;</p> <table border="1" data-bbox="349 1110 1167 1262"> <thead> <tr> <th data-bbox="349 1110 759 1161">test</th> <th data-bbox="759 1110 1167 1161">observation</th> </tr> </thead> <tbody> <tr> <td data-bbox="349 1161 759 1211">barium nitrate solution</td> <td data-bbox="759 1161 1167 1211"></td> </tr> <tr> <td data-bbox="349 1211 759 1262">silver nitrate solution</td> <td data-bbox="759 1211 1167 1262"></td> </tr> </tbody> </table>	test	observation	barium nitrate solution		silver nitrate solution		1
test	observation							
barium nitrate solution								
silver nitrate solution								

Question	Answer	Marks	
2(d)(ii)	test	observation	2
	barium nitrate solution	no reaction ;	
	silver nitrate solution	yellow ppt. ; (accept cream ppt.)	
2(d)(iii)	brown solution ;	1	
2(d)(iv)	not a sulfate / not a chloride / iodide / not a bromide ;	1	

Question	Answer	Marks
3(a)(i)	v recorded for u = 30 cm ; to the nearest 0.1 cm ;	2
3(a)(ii)	all v values present ; v values decreasing ;	2
3(a)(iii)	ratios correct ;	1
3(a)(iv)	all values correct ;	1
3(b)(i)	suitable choice of scales (\geq half the grid used) ; at least 4 plots correct to half a small square (penalise 'blobs') ; good best-fit line judgement ;	3
3(b)(ii)	indication on graph of how data obtained and at least half of line used ; correct calculation for triangle method using data from graph ;	2

Question	Answer	Marks
3(b)(iii)	(15.0 ± 1.0) cm ; 2 / 3 significant figures ;	2
3(c)	any two from: move screen slowly / to and fro (until sharpest focus obtained) ; repeat each reading and average ; object / lens / screen perpendicular to bench ; object and lens same height above the bench ; carry out experiment away from other bright light sources / in a darkened room / use bright(er) light source ;	2