



Cambridge IGCSE™

COMBINED SCIENCE**0653/63**

Paper 6 Alternative to Practical

May/June 2020**MARK SCHEME**Maximum Mark: 40

Published

Students did not sit exam papers in the June 2020 series due to the Covid-19 global pandemic.

This mark scheme is published to support teachers and students and should be read together with the question paper. It shows the requirements of the exam. The answer column of the mark scheme shows the proposed basis on which Examiners would award marks for this exam. Where appropriate, this column also provides the most likely acceptable alternative responses expected from students. Examiners usually review the mark scheme after they have seen student responses and update the mark scheme if appropriate. In the June series, Examiners were unable to consider the acceptability of alternative responses, as there were no student responses to consider.

Mark schemes should usually be read together with the Principal Examiner Report for Teachers. However, because students did not sit exam papers, there is no Principal Examiner Report for Teachers for the June 2020 series.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the June 2020 series for most Cambridge IGCSE™ and Cambridge International A & AS Level components, and some Cambridge O Level components.

This document consists of 7 printed pages.

Question	Answer	Marks
1(a)(i)	number of slices: (25 °C) 2 and (35 °C) 6 ; distance moved: (slices × 2) (25 °C) 4 and (35 °C) 12 ;	2
1(a)(ii)	suitable scale chosen ; labels correct for both axes, including units ; all points plotted correctly ;	3
1(a)(iii)	suitable curve of best fit ;	1
1(a)(iv)	increase in temperature, increase in distance moved / ORA ;	1
1(a)(v)	type of stain / concentration of stain / age of celery / type of celery / AVP ;	1
1(a)(vi)	cut every 2 mm / not clear when stain stops ;	1
1(a)(vii)	cut, on solid surface / away from fingers ;	1
1(b)	size - larger than original ; quality – smooth line, no breaks ; detail – correct number of vascular bundles ;	3

Question	Answer	Marks
2(a)	apparatus A : pipette ; apparatus B : burette ;	2
2(b)(i)	(experiment 1) 12.9 ; (experiment 4) 25.6 ;	2
2(b)(ii)	any suitable named indicator ;	1
2(b)(iii)	(indicator just) changes colour ;	1

Question	Answer	Marks
2(b)(iv)	volumes from experiment 1,2 and 3 / 2 and 3 / 1 and 3 AND closest to each other ;	1
2(b)(v)	correct average calculated using (b)(iv) volumes ;	1
2(b)(vi)	$3 \times (b)(v)$;	1
2(b)(vii)	experiment 4 / 25.6 ;	1
2(b)(viii)	did not refill burette ;	1
2(c)(i)	white ppt. ;	1
2(c)(ii)	heat / evaporate ;	1

Question	Answer	Marks
3(a)(i)	(angle shown on protractor) = $82(^{\circ})$;	1
3(a)(ii)	(angle of AB with the vertical) = $8(^{\circ})$;	1
3(a)(iii)	it is difficult to find the exact point at which the block topples / difficulty of one person pushing block and reading protractor / AVP ;	1
3(a)(iv)	(average angle =) $8(^{\circ})$;	1
3(b)(i)	diagonal line AC drawn correctly on Fig. 3.4 ;	1
3(b)(ii)	$8^{\circ} \pm 1^{\circ}$;	1
3(c)	(expect angles agree) answers are the same / close together / small (percentage) difference in values ;	1

Question	Answer	Marks
4	one marking point from each section and any <u>two</u> others: apparatus and method ramp AND ball ; means of supporting slope ; use of, e.g. metre rule to measure height ; vary height of top of slope ; diagram with two labels ; variables to control starting position of ball ; same ball / same ramp ; measurements measure distance travelled by ball along the, horizontal / level surface / bench ; several different heights of slope (at least three) ; suitable range of heights ; accuracy avoid applying force as ball is released ; repeat at each angle and average ; use of a guide to ensure ball travels straight ; conclusion plot a graph of height of slope against distance travelled ; straight line through origin would confirm prediction / ORA ; ratio of results, height / distance, is a constant ;	7