



Cambridge IGCSE™

COMBINED SCIENCE**0653/62**

Paper 6 Alternative to Practical

March 2020**MARK SCHEME**Maximum Mark: 40

Published

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This document consists of **8** printed pages.

Question	Answer	Marks
1(a)(i)	six values recorded to nearest mm ; values correct ± 2 mm ;	2
1(a)(ii)	units included in headings (mm or cm) ;	1
1(a)(iii)	correct average value for both ;	1
1(a)(iv)	can identify anomalies / not all beans the same ;	1
1(a)(v)	correct axis with units – average length / mm or cm, A and B identified and bars more than half the grid ; correct plotting of bars $\pm$ half small square ;	2
1(a)(vi)	mass / volume ;	1
1(a)(vii)	pattern on surface / shape / colour ;	1
1(b)(i)	starch present in A and absent in B ;	1
1(b)(ii)	<i>method:</i> add Benedict's solution ; heat ; <i>positive result:</i> yellow / orange / green / (brick)red ;	3

Question	Answer	Marks
2(a)(i)	20.5 ; 31.0 ;	2
2(a)(ii)	H ;	1
2(a)(iii)	fastest bubbles ; largest change in temperature ;	2
2(a)(iv)	measure volume with measuring cylinder / same initial temperature / same mass or amount or size of metal ;	1
2(a)(v)	temperature increases ;	1
2(a)(vi)	initial G / 25.5 ;	1
2(a)(vii)	misread thermometer / AVP, e.g. temperature recorded late ;	1
2(a)(viii)	<i>test</i> : lighted splint AND <i>positive result</i> : pops ;	1
2(b)(i)	solution turns colourless AND a pink solid (forms) ;	1
2(b)(ii)	H is more reactive than, G / copper ;	1
2(c)	H > G > J > L ;	1

Question	Answer	Marks
3(a)(i)	one oscillation is too quick ;	1
3(a)(ii)	26.43 (s) ;; <i>if no mark awarded, allow 26.42 for one mark</i>	2
3(b)(i)	1.32 (s) ;	1
3(b)(ii)	1.33 (s) ;	1
3(c)	card placed behind pendulum and black line aligned with pendulum, as it hangs vertically / before it swings ; helps pupil to judge when oscillation is complete ;	2

Question	Answer	Marks
4	one mark from each section and any two others (if one section is missing max 6 etc.) Method: set up beam with A (a fixed distance) and place B / fixing A to the beam and place B ; move mass B until beam is balanced ; measure distance of B from pivot (when beam is balanced) ; Accuracy: sensible description of how to find location of centre of mass B ; repeat all readings / repeat every mass ; description of how to avoid parallax error when taking readings ; Values: at least 3 values of mass B ; values of mass B all > 50 g ; Table: suitable column headings for method, e.g. value of mass B AND distance of B (from pivot) ; appropriate units for each column heading, e.g. (mass) g AND (distance) cm / mm / m ; Processing and Conclusion: calculate average of distances for each mass used / distance of B from pivot is (reading – 50) ; plot a graph of mass of B versus distance of B from pivot at balance ; draw best-fit line or curve ; as mass increases is distance more or less / as mass increases look for trend in distance ;	7