

### **Cambridge International Examinations**

Cambridge International General Certificate of Secondary Education

#### **CO-ORDINATED SCIENCES**

0654/52

Paper 5 Practical Test

May/June 2017

MARK SCHEME

Maximum Mark: 45

#### **Published**

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# Cambridge IGCSE – Mark Scheme **PUBLISHED**

Question	Answer	Marks
1(a)(i)	quality drawing in pencil using at least half the space ; male parts, anther and filament drawn ; female parts, stigma and ovary drawn ; petals drawn ;	4
1(a)(ii)	correctly labelled: anther; stamen; stigma; ovary;	4
1(b)(i)	line drawn edge to edge ; correct measurement of drawing <b>and</b> sensible flower measurement ;	2
1(b)(ii)	correct calculation ;	1
1(c)	stigma circled ;	1
1(d)	Benedict's solution ; heat ; orange / red indicates more sugar <b>or</b> yellow / green indicates less sugar ;	3

Question	Answer	Marks
2(a)(i)	temperature recorded and within 5 °C of supervisor's value ; both volumes recorded <b>AND</b> $V_2 > V_1$ ;	2
2(a)(ii)	temperature recorded for <b>experiment 2</b> and 8–12 °C above the temperature for <b>experiment 1</b> ; both volumes recorded <b>AND</b> both greater than those in <b>(a)(i)</b> ;	2
2(a)(iii)	temperatures for <b>experiments 3 and 4</b> recorded <b>AND</b> to nearest half degree; $V_1$ for <b>experiments 3 and 4</b> recorded and increasing compared with <b>experiment 2</b> ; $V_2$ for <b>experiments 3 and 4</b> recorded and increasing compared with <b>experiment 2</b> ;	3
2(b)(i)	all values of V correct;	1

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### Cambridge IGCSE – Mark Scheme **PUBLISHED**

Question	Answer	Marks
2(b)(ii)	linear scales using at least half of grid in each direction; at least three points plotted correctly within half a square; best straight line or best curve;	3
2(c)	the higher the temperature the higher the rate of the reaction ;	1
2(d)(i)	removes timing error associated with starting the stopclock and connecting apparatus / could be too fast in first minute (due to powder on chips) / could be too slow in first minute (due to coating) / removes error due to air in measuring cylinder / not enough gas in first minute / less (percentage) error in a larger volume;	max 1
2(d)(ii)	bubble into water; count bubbles in a certain time / time for certain number of bubbles;  OR connect delivery tube to a gas syringe; measure volume in a certain time / time for a certain volume;  OR place reaction flask on a balance; measure mass (decrease) in a certain time / time for certain drop in mass;	max 2

Question	Answer	Marks
3(a)(i)	$m_1$ present <b>AND</b> to 0.1 g;	1
3(a)(ii)	$V_1$ present <b>AND</b> 65 ± 5 (cm <sup>3</sup> );	1
3(a)(iii)	$m_2$ present <b>AND</b> > $m_1$ ;	1
3(a)(iv)	calculation correct <b>AND</b> 2/3 sig fig; g/cm³;	2
3(a)(v)	read to bottom of meniscus / avoid parallax error / read perpendicular to scale / read at eye level ;	1
3(b)(i)	$m_3$ present;	1

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## Cambridge IGCSE – Mark Scheme **PUBLISHED**

Question	Answer	Marks
3(b)(ii)	$V_2$ present; $V_2 > V_1$ ;	2
3(b)(iii)	calculation correct;	1
3(b)(iv)	correct substitution of values <b>AND</b> $d_2$ within 10% of $d_1$ ; $d_1$ and $d_2$ values to 1 dp each 1.0 $\pm$ 0.1 (g / cm <sup>3</sup> );	2
3(c)(i)	test-tube touching the side of cylinder / how the test-tube floats / zero error on balance;	1
3(c)(ii)	state effect on $V$ or $m$ and hence effect on $d_2$ ;	1
3(c)(iii)	measuring cylinder otherwise wet / contains some water when its 'dry' mass is measured;	1

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