
CO-ORDINATED SCIENCES

0654/52

Paper 5 Practical Test

May/June 2017

MARK SCHEME

Maximum Mark: 45

Published

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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)	<i>correctly labelled:</i> anther ; stamen ; stigma ; ovary ;	4
1(b)(i)	line drawn edge to edge ; correct measurement of drawing and 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 or 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 AND $V_2 > V_1$;	2
2(a)(ii)	temperature recorded for experiment 2 and 8–12 °C above the temperature for experiment 1 ; both volumes recorded AND both greater than those in (a)(i) ;	2
2(a)(iii)	temperatures for experiments 3 and 4 recorded AND to nearest half degree ; V_1 for experiments 3 and 4 recorded and increasing compared with experiment 2 ; V_2 for experiments 3 and 4 recorded and increasing compared with experiment 2 ;	3
2(b)(i)	all values of V correct ;	1

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 AND to 0.1 g ;	1
3(a)(ii)	V_1 present AND 65 ± 5 (cm ³) ;	1
3(a)(iii)	m_2 present AND $> m_1$;	1
3(a)(iv)	calculation correct AND 2 / 3 sig fig ; g / cm ³ ;	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

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 AND d_2 within 10% of d_1 ; d_1 and d_2 values to 1 dp each 1.0 ± 0.1 (g / cm ³) ;	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