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Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY

0610/51

Paper 5 Practical Test

October/November 2016

MARK SCHEME

Maximum Mark: 40

Published

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Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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Page 2	Downloaded from eduresourceza.com Mark Scheme	Syllabus	Paper
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Abbreviations used in the Mark Scheme:

- ; separates marking points
- / alternatives
- I ignore
- R reject
- A accept (for answers correctly cued by the question, or guidance for examiners)
- AW alternative wording
- AVP any valid point
- ecf credit a correct statement / calculation that follows a previous wrong response
- ora or reverse argument
- () the word / phrase in brackets is not required, but sets the context
- underline actual words given must be used by the candidate (or grammatical variants of them)

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Question	Answer	Marks	Guidance
1(a)	one table drawn with lines ; column/row headings (time <u>and</u> temperature); appropriate units ($^{\circ}\text{C}$ <u>and</u> minutes) in the header only; temperatures recorded for beaker A ; temperatures recorded for beaker B ; appropriate trend;	6	
1b(i)	temperature fall correct for beaker A and B (with units) ; divide both temperature differences by 5 (minutes) ; correct answer obtained; correct units ($^{\circ}\text{C}/\text{min}$) ;	4	
1(b)(ii)	the greater the volume of the body, the smaller the rate of heat loss / ref to speed (e.g. slower) / ora ; rate of heat loss in A is less than beaker B / ora ; appropriate data quote comparing A and B ; the greater the volume of the body, the greater the (total) heat loss / ora ;	2	

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Question	Answer	Marks	Guidance
1(c)(i)	<i>any 2 from:</i> temperature of environment; size / volume of beaker; starting temperature of water; time intervals / 1 minute to record temperature ; total time / 5 minutes for investigation;	2	
1(c)(ii)	<i>idea</i> of time taken for the thermometer to reach the water temperature is longer;	1	
1(c)(iii)	<i>error:</i> drawing the line accurately / judging the water level against the line / measuring height (rather than volume); <i>improvement:</i> measure the volumes of water / AW ;	2	A not measuring volume I different sizes unqualified A beakers of different sizes would mean volumes would be inaccurate for the error and using identical beakers for the improvement

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Question	Answer	Marks	Guidance
1(d)	<i>any 6 from:</i> 1 identical containers / containers of equal volume / containers of equal size; 2 same volume of water in each container; 3 same starting temperature for the water; 4 idea of placing (containers) in 2 or more different temperatures; 5 detail of method to keep external temperature constant, e.g. use of water-bath or a fridge and explanation; 6 measure temperature in each container for the same time / measure temperature in each container at set intervals; 7 repeat and calculate an average / mean; 8 calculate / compare rate of heat loss (for each temperature);	6	A same depth A named places A time how long it takes for temperature to fall a set number of degrees A repeat to identify anomalies
1(e)(i)	A(xes) – labelled with units; S(cale) – even scale and plots to fill half or more of the printed grid ; P(lot) – all points plotted accurately $\pm \frac{1}{2}$ square ; L(ine) – line joining all the points $\pm \frac{1}{2}$ square ;	4	A points joined by ruled lines / curved line of best fit R bar chart or if line extrapolates beyond the plot points

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Question	Answer	Marks	Guidance
1(e)(ii)	as temperature increases (rate of) sweating increases / ora ; idea of increasing rate of increase as temperature rises / not a linear relationship / not directly proportional;	2	A higher temperature, more sweat A exponential increase
		Total: 29	

Question	Answer	Mark	Guidance												
2(a)	<table><tr><td>letter</td><td>genus of flower</td></tr><tr><td>A</td><td>Geranium</td></tr><tr><td>B</td><td>Sorghum</td></tr><tr><td>C</td><td>Draba</td></tr><tr><td>D</td><td>Fuschia</td></tr><tr><td>E</td><td>Dactylis</td></tr></table>	letter	genus of flower	A	Geranium	B	Sorghum	C	Draba	D	Fuschia	E	Dactylis	4	4 or 5 correct = 4 marks 3 correct = 3 2 correct = 2 1 correct = 1
letter	genus of flower														
A	Geranium														
B	Sorghum														
C	Draba														
D	Fuschia														
E	Dactylis														

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Question	Answer	Marks	Guidance
2(b)(i)	O (utline) – single clear lines and without shading ; S (ize) – occupies at least half of the space provided ; D (etail) to show anther and filament in approx. the correct proportion; L (abel) to both anther and filament that touches the structure ;	4	
2(b)(ii)	length of filament with units ; length of filament on drawing with units; correct calculation from Candidate's figures;	3	A measurements in cm A ± 1 mm ecf for correct calculation from incorrect measurements
		Total: 11	