Cambridge
O Level

Cambridge International Examinations
Cambridge Ordinary Level

BIOLOGY **5090/32**

Paper 3 Practical Test **October/November 2016**

MARK SCHEME

Maximum Mark: 40

Published

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Mark schemes will use these abbreviations:

;	separates marking points
/	alternatives
()	contents of brackets are not required but should be implied
R	reject
A	accept (for answers correctly cued by the question, or guidance for examiners)
Ig	ignore (for incorrect but irrelevant responses)
AW	alternative wording (where responses vary more than usual)
AVP	alternative valid point (where a greater than usual variety of responses is expected)
ORA	or reverse argument
underline	actual word underlined must be used by candidate (grammatical variants excepted)
+	statements on both sides of the + are needed for that mark

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Question	Answer	Mark	Additional Guidance
1(a)(i)	large / broad / wide petals ; (petals form) landing platform **AW** (for insects) ; stamens / filaments erect / sturdy / not pendulous / not hanging ; stigma solid / not feathery ;	**2**	**Ig** reference to features not visible in Fig. 1.1
1(a)(ii)	6 anthers **+** style with stigma drawn ; clear, continuous outlines of anthers **+** no shading anywhere **+** length of style with stigma at least 60 mm ; all filaments drawn with double line **+** all anthers below the level of the top of the stigma ; rounded top of stigma **+** stigma wider than style ;	**4**	
1(a)(iii)	A labelling an anther ; B labelling the stigma ; C labelling the style ;	**3**	

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Question	Answer	Mark	Additional Guidance
1(b)(i)	both results for ripe fruit ; conclusions consistent with candidate's results ; both results for unripe fruit ; conclusions consistent with candidate's results ;	4	Definitive results / conclusions are not given as they may vary depending on the type of fruit available locally.
1(b)(ii)	animal (dispersed) **AW** ; fruit attractive (to animals) / smell / colour / taste / sweet / contains sugar / juicy / fleshy ; fruit eaten / seeds eaten ; (seeds) passed unharmed by digestion / egestion / rejected by animal / seed spat out ;	3	
	Total:	16	

Question	Answer	Mark	Additional Guidance
2(a)	gas bubbles released / foam / froth / effervescence ;	1	
2(b)(i)	all boxes in Table 2.1 complete ; no bubbles for (large and small) boiled potato ; bubbles for raw potato ; more bubbles for smaller raw pieces ;	4	

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Question	Answer	Mark	Additional Guidance
2(b)(ii)	raw potato produces more oxygen / gas (than boiled potato) **;** boiled potato – (enzyme / catalase) inactive / destroyed / denatured **;** more oxygen / gas / bubbles released from smaller pieces of raw potato **ORA ;** small pieces – greater surface area / more enzyme exposed / **AW** / **ORA ;**	**4**	
2(c)	rekindle / relight **;** glowing splint **AW ;**	**2**	

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Question	Answer	Mark	Additional Guidance
2(d)	repeat tests **+** calculate mean / average / identify anomalies **;** same mass / weight / volume of potato for each experiment **;** same volume / concentration of solution (hydrogen peroxide) **;** same potato / same species / same type **;** same temperature **;** use different apparatus e.g. gas syringe / graduated tube to collect gas volume / measure gas volume **AW ;**	**4**	
	Total:	**15**	

Question	Answer	Mark	Additional Guidance
3(a)(i)	neatly drawn table with all lines ruled **;** 2 columns / rows headed 'student 1' and 'student 2' **;** one header across both columns / rows: measurement / distance / length / height **+** cm **;**	**3**	
3(a)(ii)	12 **;**	**1**	
3(a)(iii)	anomalous result / outlier / doesn't fit trend / **AW ;**	**1**	
3(a)(iv)	lack of concentration / distraction / **AW ;**	**1**	**A** student not ready / ruler upside down / hand not at zero

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Question	Answer	Mark	Additional Guidance
3(a)(v)	axes labelled 'student 1' and 'student 2', central to columns / rows **+** mean distance / mean results **+** cm **;** linear scale on distance axis **+** 0 on y axis **+** use of at least half of grid in both directions **;** correct plots **+** ruled lines **+** both bars of equal width **;**	**3**	
	Total:	**9**	
	Paper Total:	**40**	

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