Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/62**

Paper 6 Alternative to Practical **March 2019**

MARK SCHEME

Maximum Mark: 40

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the March 2019 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

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GENERIC MARKING PRINCIPLE 5: Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).
GENERIC MARKING PRINCIPLE 6: Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

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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 (where responses vary more than usual)
- 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 word given must be used by candidate (grammatical variants excepted)
- max indicates the maximum number of marks that can be given

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Question	Answer	Marks	Guidance
1(a)(i)	table drawn with internal lines and two columns ; column headings ; correct use of the scale to record the intensity score ;	**3**	
1(a)(ii)	(amount / intensity of) stain / AW ;	**1**	
1(a)(iii)	(size / type / dryness) of cloth ; (type of) food / stain ; time (treatment / stirring) ;	**1**	
1(a)(iv)	using same / only one (unwashed) glass rod in each solution ; *idea of* contamination ; OR stirring will not happen at same intervals in each solution ; some have a longer soaking time ; OR inconsistent use of rod ; uneven removal of stain ;	**2**	
1(a)(v)	(distilled) water / not washed ; to compare with the effect of the other treatments ; as a colour reference ;	**2**	
1(a)(vi)	because it is subjective / qualitative / judged by eye / different people have different eyesight ; *idea of* limited number of categories of intensity ; *idea that* the stain on the underside of the cloth was not considered ;	**1**	
1(b)(i)	temperature ;	**1**	
1(b)(ii)	brown (iodine) stain indicates that the starch has disappeared / AW ; blue-black stain indicates that starch is still present ; washing power solution moves through the agar ;	**1**	

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Question	Answer	Marks	Guidance
1(b)(iii)	**A** axes labelled with units ; **S** linear scale for plotted points that uses more than half of the grid ; **P** all points plotted accurately ; **L** lines with no extrapolation ;	**4**	
1(b)(iv)	as temperature increases diameter increases and then decreases ; increase is more shallow than decrease ; **ora** data quote with correct units ;	**2**	
1(b)(v)	smaller intervals (at different temperatures) ; between 40 °C and 50 °C ;	**2**	

Question	Answer	Marks	Guidance
2(a)(i)	outline ; size ; detail ;;	**4**	
2(a)(ii)	(line **CD** on Fig. 2.1) 36±1 mm ; line **CD** drawn on their drawing and value recorded for line ; correct answer from candidate values rounded to a whole number ;	**3**	**A** 3.6 cm
2(a)(iii)	*in the healthy person:* (more) alveoli / (higher) density of alveoli / more spaces ; smaller, alveoli / air spaces / AW ; thinner (alveolar) walls ; more wavy edges in the lung tissue / AW ; larger surface area ; ref. to bronchiole / additional structure present ;	**3**	
2(b)(i)	limewater, swallowed / inhaled / AVP ;	**1**	
2(b)(ii)	hydrogencarbonate indicator ;	**1**	**A** correct named alternative
2(b)(iii)	4(%) ;;	**2**	

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Question	Answer	Marks	Guidance
2(c)	test before and after exercise ; description of method of, exercise / rest ; named controlled variables ;;; record time taken for limewater to go cloudy ; method to judge cloudiness ; refresh equipment before next measurement ; at least three participants sampled ; repeat (whole experiment) with the same individual three times ; suitable safety precaution ;	**6**	

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