UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

0610 BIOLOGY

0610/62 Paper 6 (Alternative to Practical), maximum raw mark 40

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 must be read in conjunction with the question papers and the report on the examination.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

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Mark schemes will use these abbreviations:

- **;** separates marking points
- / alternatives
- R reject
- A accept (for answers correctly cued by the question, or guidance for examiners)
- AW alternative wording (where responses vary more than usual)
- underline actual word given must be used by candidate (grammatical variants excepted)
- D, L, T, Q quality of drawing / labelling / table / writing as indicated by mark scheme
- max indicates the maximum number of marks that can be given

Question	Mark scheme	Mark	Guidance
1 (a)	(lemon juice is) **acid**(ic);	[1]	
(b)	no colour change / less colour change in dish 2 ;	Max [1]	
(c) (I)	lemon juice is acidic ; denature enzyme ; browning does not happen ;	[3]	
(ii)	*Method:* put apples in high or very low temperature ; *Result:* no or less colour change / not or less brown ; *Explanation:* high temperatures denature enzymes OR cold temperatures inactivate enzymes / stops enzyme activity ;	[3]	
(d) (I)	*Comparative colour change* cut surface goes darker brown / greater colour change ; *Speed of reaction* cut surface turns brown more quickly ;	[2]	
(ii)	cells separated **and** contents remain intact	[1]	
		[Total: 11]	

2 (a)	**Outline:** use of single clear lines for drawing ; **Size:** head larger than head in photograph at least half of space available ; **Detail: two** details from pair of antennae or pair eyes in correct position ; pair of mandibles / mouth parts ; **Label** 1 label mark only: **one** from eye / antenna / jaws or mouth or mandibles AW ;	[5]	**R** shading / cross hatching(including eyes)
(b) (I)	insects / Insecta ;	[1]	
(ii)	body divided into 3 parts or sections / head, thorax and abdomen ; three pairs of legs ;	[2]	
(c) (i)	Use of reducing sugar and starch test reagents **only** ; *reducing sugar test:* crush / mix with water / AW ; add Benedict's solution ; heat ; *starch test:* add iodine solution ; *Safety feature:* goggles / lab. coat AW / tongs / heat in water bath ;	[6]	

(ii)	*Observation for reducing sugar test:* to green / yellow / orange / red **;** *Observation for starch test:* to blue / black **;**	[2]	
(d)	*method:* two containers – one with banana, one with plantain / AW **;** OR one container / choice chamber containing banana AND plantain / AW **;** *controlled variable:* idea of same time period / same mass fruit **;** *collecting results:* record number flies seen / find change in mass of banana and plantain AW **;** *conclusion:* if more flies in banana than plantain it is preferred fruit and vice versa / AW / larger loss in mass of preferred fruit and vice versa **;**	Max [3]	
		[Total: 19]	

3 (a) (i)	**A** filament ; **B** anther ; **C** style ; **D** stigma ;	[4]	
(ii)	**B** ;	[1]	
(iii)	**D** ;	[1]	
(iv)	large petals / honey or nectar guides ;	[1]	
(b)	**20** ; actual length = $\frac{\text{length of pollen grain in diagram}}{\text{magnification}}$; actual length = **0.1** ;	[3]	
		[Total: 10]	