CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2012 series

0610 BIOLOGY

0610/52 Paper 5 (Practical Test), 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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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Question	Mark scheme	Mark allocation	Guidance
1 (a)	**(i)** 1st reading for Table 1.1;	[1]	Units for time in seconds.
	(ii) 2nd and 3rd readings in Table 1.1;;	[2]	Units for time in seconds. *One mark for prac and one mark for trend*
	(iii) increased reliability; identify / reduce errors / anomalies; judging clotting first time / first reading may not be accurate; to check method / technique ; AVP	[max 2]	Ignore accuracy, average, mean.
(b)	Dried milk longer time to clot than fresh milk / ORA; credit data handling; milk contains less substrate / protein ; enzyme not so reactive; AVP;	[max 3]	Fresh milk results are based on candidates' entries in Table 1.1. Must have units.
(c)	Temperature control; Rate of enzyme activity affected; Water absorbs fluctuations / AW; AVP;	[2]	Fresh milk results are based on candidates' entries in Table 1.1.

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<table>
<tr>
<td>(d)</td>
<td>(i) & (ii)
Source of error improvement
<table>
<tr><td>Determining the end point;</td><td>Colorimeter to following clearing /AW;</td></tr>
<tr><td>Variation in milk protein / substrate;</td><td>Same origin for milk or mixing the milk before sampling;</td></tr>
<tr><td>Agitation / shaking;</td><td>Use a ‘shaker’;</td></tr>
<tr><td>Source of enzyme;</td><td>From same source;</td></tr>
<tr><td>Differences in apparatus / timing methods;</td><td>Appropriate improvements;</td></tr>
</table></td>
<td>[1] & [1]</td>
<td>Error must be linked to improvement.
.</td>
</tr>
<tr>
<td>(e)</td>
<td>(i) safety – eye protection / lab coat / gloves;
equality of mass / volume;
test filtrate / whey and clots separately;
biuret reagent;
(blue) to purple / lilac / mauve / AW;
comparison on intensity / description of colours / faster or slower colour change;</td>
<td>[max 4]</td>
<td>A description of 2 stage method</td>
</tr>
<tr>
<td></td>
<td>(ii)
<table>
<tr><td></td><td>clots</td><td>liquid</td></tr>
<tr><td>observation</td><td>;</td><td>;</td></tr>
<tr><td>conclusion</td><td>;</td><td>;</td></tr>
</table></td>
<td>[4]</td>
<td>Check supervisor’s report</td>
</tr>
</table>

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		[Total 20]	
2 (a)	**(i)** **O** outline; **S** size and proportion; **D** detail; **L** label;	[4]	Clear unbroken line and no shading.
	(ii) 2 from: (asexual) reproduction / storage / perennation / anchorage;	[2]	Ignore references to absorption as referring to roots and not the whole organ.
(b)	No colour change / stays brown or orange; No starch present;	[2]	
		[Total 8]	
3 (a)	use oxygen / taking in; soda lime absorbs carbon dioxide *produced* / *released*; volume decrease; drop in pressure / suction;	[4]	
(b)	**A** axes; **S** size; **P** correct plots; **L** line;	[4]	
(c)	Distance of bubble moved; increases with rise in temperature to 35°C; decreases with rise in temperature [in excess of 35°C]; 35°C is the best / optimum;	[3]	

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(d)	no soda lime / glass beads / other inert substance / dead maggots / no maggots;	[1]	
		[Total 12]	

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