

**CAMBRIDGE**  
INTERNATIONAL EXAMINATIONS

**NOVEMBER 2002**

**INTERNATIONAL GCSE**

<b>MARK SCHEME</b>
<b>MAXIMUM MARK : 40</b>
<b>SYLLABUS/COMPONENT : 0610/5</b> <b>BIOLOGY</b> <b>(PRACTICAL)</b>

Page 1	Mark Scheme	Syllabus
	IGCSE Examinations – November 2002	0610

- 1 (a) (i) Drawing: (max 4 marks)  
8cm or more space used;  
clear sharp outline;  
axillary / lateral , buds / shoots, shown;  
scale leaves shown;  
terminal bud / attachment to parent plant , shown;  
lenticels shown;
- Labels: (max 1 mark)  
(axillary / lateral) bud / shoot / eye;  
scale / reduced , leaf;  
terminal bud / attachment to parent plant; max 5
- (ii) organ of , perennation / storage;  
asexual reproduction;  
genetically identical offspring;  
stores , starch / products of photosynthesis; max 2
- (iii) (axillary / terminal) bud;  
(reduced) leaves;  
lenticels; max 1
- (b) (ii) froth / gas / bubbles , rose in boiling tube;  
vigorous reaction; 2
- (d) (i) y axis labelled, units in mm;  
correct plotting (refer to (b)(i) and (c));  
chopped greater than 4 cube level;  
x axis labelled; 4
- (ii) chopped has greater surface area / 4 cubes have smaller surface area;  
chopped cuts open more cells / AW;  
releases more enzyme (molecules);  
more contact with , substrate / Y;  
Y / H<sub>2</sub>O<sub>2</sub> , is substrate;  
gas / oxygen , is product;  
more , gas / froth / bubbles , in chopped than in cubes; max 4
- (e) (i) boiled potato;  
same , amount of chopped / number and size of cubes of , potato;  
cool to same temperature as experiment before using potato;  
same quantity of Y;  
same concentration of Y; max 3
- (ii) no reaction (at this temperature);  
enzyme has been denatured (by boiling); 2

[Total : 23]

Page 2	Mark Scheme	Syllabus	Number
	IGCSE Examinations – November 2002	0610	

2 (a) (i) (½ mark per label, round up)  
 label lines and labels correct for incisor, canine, premolar, molar ;; 2

(b)

	incisors	canines	premolars	molars
upper	4	2	4	6
lower	4	2	4	6

1

(c)

	incisors	canines	premolars	molars
upper	4	2	4	4
lower	4	2	4	4

or refer to Fig. 2.1 if different 1

(d) candidate has no wisdom teeth / converse;  
 wisdom teeth found , after puberty / between 16 – 25 years / AW;  
 tooth / teeth , extracted / absent from birth;  
 accounts for no differences;; max 2

(e) (i) clear sharp outline;  
 incisor has , chisel / square / rectangular , shape;  
 canine has conical shape; 3

(ii) incisor tip , flat / broad , and thin;  
 incisor cuts;  
 canine tip pointed;  
 canine , seizes / tears / rips; 4

(f) (i) 100mm<sup>2</sup> / 1cm<sup>2</sup> , approx. (allow 80 – 144 / 0.8 – 1.44); 1

(ii) large surface area for , grinding / crushing;  
 uneven cusps help , grinding / crushing;  
 breaks open , cells / tissues / plant cells;  
 releasing , cell / tissue , contents for digestion; max 3

[Total : 17]