

NOVEMBER 2002

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK : 40

SYLLABUS/COMPONENT : 0610/5

BIOLOGY

(PRACTICAL)



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- 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_2O_2 , 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	Paper
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- 2 (a) (i) ($\frac{1}{2}$ 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) $100\text{mm}^2 / 1\text{cm}^2$, 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]