

CAMBRIDGE
INTERNATIONAL EXAMINATIONS

JUNE 2003

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK: 40

SYLLABUS/COMPONENT: 0610/05

**BIOLOGY
(Practical)**



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- 1 (a)** * lose if ***no table***;
- * use of ruled lines for columns and rows;
- * time (table heading);
- * height/level/measurement (table heading);
- record of units mm/cm and min/(A) clock times;
- readings taken at 5 min intervals;
- records for both sets of dough S1 and S2;
- manipulation of data/recording increase or differences;
- max 5**
- (b)** * *lose if bar chart*
- orientation of axes; (time horizontal, height vertical)
- labels for axes including units; **(A) clock times**
- plotting data using suitable scale; **c. half the paper min.**
- * plotting data for S1 (points visible, no obvious error, not (0,0));
- * plotting data for S2 (points visible, no obvious error, not (0,0));
- * clear lines;
- each curve identified/use of key;
- max 6**
- (c)** curve for S1 rises (with time);
- comment on rate of increase; **suitable qualification**
- curve for S2 does not rise;
- Look at candidate's graph. If not as expected, apply scheme as S1 trend, S2 trend and suitable comment on rate of increase**

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- (d) yeast is, living organism/fungus;
 respiration;
 without oxygen/anaerobic/fermentation;
 sugar source of, food/nutrition/energy/substrate;
 equation (for anaerobic respiration);
 carbon dioxide evolved;
 trapped/bubbles (remain in dough);
 causes dough to rise;
 rise stops as sugar runs out;
 rise stops as yeast killed by alcohol;
 dough sinks and valid explanation.

max 6

Total: 20

- 2 (a) (i) purple/mauve/lilac; ***reject precipitate/dark purple***
 (protein) present;

2

- (ii) add, sodium/potassium, hydroxide (solution);
 then (a few drops) copper sulphate (solution);

2

- (b) (i) Drawing – clear outline S4;
 at least 5 cm in one direction;
 main shell (if present)/pattern on dorsal surface (if shell absent);
 foot/other soft parts, shown;
use label to help you identify presence of soft parts if drawing unclear or if snail in shell

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Labels – shell/dorsal surface pattern; **reject exoskeleton alone**
 any soft part; **(A) soft body reject eyes alone**

6

(ii) length of drawing measured correctly (± 2 mm);

correct calculation of "drawing length \div specimen length"; **(1 d.p.)
 ratio needs to be labelled**

2

(c) *Candidates may use snails "as they are" in this beaker or remove some/all of them. Apply scheme to any sensible plan.*

use, thermometer/temperature probe;

place thermometer in contact with soft part of snail to record body temp.;

record temp. of surrounding air; **(A) area reject earth**

repeats; **(A) several snails**

investigate at different temps.;

leave snails to adjust to surroundings before measuring; **(A) time ref.**

idea of fair test; (e.g. same procedure when investigating at different temps.; leave same time interval between measurements; use same number of snails; other detail of fair test) **reject control**

max 3

(d) (i) hard/rigid;

colour/pattern;

contrast between inside and outside;

shape; **(A) like**

hollow;

opening;

texture; **(A) smooth qualified**

dimensions;

max 2

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(ii) effervescence/fizzing/AW;

shell is made of calcium carbonate;

2

(iii) support/protection ((**A**) *shelter*)/camouflage/muscle attachment;

1

Total: 20