

JUNE 2002

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK : 40

SYLLABUS/COMPONENT : 0610/5

**BIOLOGY
(PRACTICAL)**

Page 1	Mark Scheme	Syllabus	Paper
	IGCSE Examinations – June 2002	0610	5

The Mark Scheme

As a guide to interpreting the mark scheme, please note:

- (a) Candidates must use the **correct biological term in the right context**, or some variation agreed during co-ordination. (e.g. the statement '**use of biceps and triceps as sphincter muscles producing movement of the arm**' will not be acceptable as use of the term *sphincter* is incorrect).
- (b) A statement must be **biologically correct** and, therefore, an Examiner must not simply look for a key word, or words, and mark it correct. (e.g. '**waste materials from the alimentary canal leave the anus as faeces by the process of excretion**', will not be acceptable, even if the points in bold are underlined on the mark scheme).

It is vital that the Examiners read the whole sentence.

- (c) Disregard spelling mistakes when awarding the content mark, unless otherwise specifically instructed, provided that the word is clearly recognisable and does not have another biological meaning, for instance *mitosis/meiosis; ureter/uterus/urethra; urea/urine; thymine/thiamine; adenine/adenosine*.
- (d) Do not select correct points from a list which includes wrong points, provided by the candidate. For example, if three points are required and candidates give five, mark the first three and ignore the last two. Likewise, if the candidate has made several attempts at the same point without clearly crossing some out, mark the first attempt. The candidate, not the Examiner, is answering the question.
Where a specified number of points are required in an answer, and numbered lines are provided, **only one mark should be awarded per specified line.**
- (e) Do not transfer marks from section to section within a question, unless instructed to do so. Marks are not normally given for correct information in the wrong sub-section.
- (f) Mark all the candidate's answers. Do not restrict your marking to lines or spaces provided in the answer booklets.
- (g)
- | | | |
|---------------------------------|---|--|
| a semi colon | : | indicates a separation of marking points |
| an oblique line | / | indicates alternative wording or acceptable alternative |
| R | | means reject |
| A | | means accept |
| A.W | | means 'alternative wording' |
| underlined with a straight line | | accept this word only , no alternative word is acceptable |
| D | | represents quality mark(s) awarded for diagrams, as indicated on the mark scheme |
| L | | represents mark(s) awarded for labels on diagrams, as indicated on the mark scheme |

Page 2	Mark Scheme	Syllabus	Paper
	IGCSE Examinations – June 2002	0610	5

- 1.(a) (I) clear/colourless/transparent; 1
- (ii) milky/cloudy/white; 1
- (b) Volume increases; 1
- (c) appearance: bubbles of gas/carbon dioxide;
cloudy/creamy/white PLUS particulate/sediment AW R precipitate;
smell : yeasty/ethanol /of alcohol/like beer; max 2
- (d) sucrose converted to glucose;
glucose used in respiration;
no supply of oxygen/anaerobic/fermentation;
ethanol/alcohol is a product;
carbon dioxide is a product;
which turns limewater milky; max 5
- (e) (I)red/yellow/orange R green;
protein absent; 2
- (ii) yeast has enzyme/sucrase;
yeast/enzyme catalyses sucrose to glucose; 2
- (iii) glucose/sugar molecule small enough to move through/across membrane;
diffusion/dialysis;
from high to low concentration; max 2
- (f) enzyme(s) in yeast denatured; A yeast killed R enzyme killed
no reducing sugar formed;
respiration ceases;
no carbon dioxide given off/produced; max 3
- (total 19)

- 2.(a) drawing: clear,sharp outline; R single line drawing
quality of drawing: use of 8 cm.space or more;
seedling A and B : A shorter internodes than B;
A larger leaves than B;
A thicker stem than B;
A taller overall than B; max 5

Page 3	Mark Scheme	Syllabus	Paper
	IGCSE Examinations – June 2002	0610	5

- (b) seedling A seedling B
- long internodes short internodes;
large leaves small leaves ;
green leaves /stem yellow leaves/stem;
thicker stem thinner stem; max 3
- A other valid point eg. grooved stem/smooth stem;
- (c) 1. Leaf venation pinnate/reticulate/net/not parallel ;
2 .Tap root/main root/not adventitious roots;
3. Leaf shape broad;
4. two cotyledons; max 2
- (d) Drawing:
Fills space;min 3.5 cm
Clear,sharp outline;
Detail :
Shape of cotyledon/detail of small leaves in plumule;
Hilum shown;
Micropyle shown; max 3,
Observation:Labels:
External appearance: hilum/scar/point of attachment (to pod);
Micropyle;
Internal structure : two cotyledons;
Plumule; R shoot
Radicle;
Attachment of cotyledons to embryo; max 3 , 6
- (e)(I) explanation : count squares/suitable maths technique;
measure/be aware of value of, single square;
area : correct answer(approx);
units in mm²/cm²; max 3
- (ii) shoot C: area of leaf in (e)(I) x 8 (or no.of leaves provided);
correct answer in mm²; A error carried forward
(total 21)