

NOVEMBER 2001

GCE ADVANCED SUBSIDIARY LEVEL

MARK SCHEME

MAXIMUM MARK : 25

SYLLABUS/COMPONENT : 8700/3

**BIOLOGY
(PRACTICAL)**



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|-------------|---------------------------------------|----------|-------|
| | AS Level Examinations – November 2001 | 8700 | 3 |

- 1 (a) three similar colours – green – a variation of; 1
- (b) table headings: flask / beaker (contents of);
 volume of sulphuric acid added in cm³;
 three burette readings;
 tube **B** a value below 3 cm³;
 value **A** less than that of **C**;
 two columns (two rows) only and need not be lined;
 value of **C** greatest; 5 max
- (c) ref to molecular effect, enzyme colliding with substrate to
 give ammonium carbonate;
 titration gives amount of ammonium carbonate produced;
 boiling leads to little or no reaction;
 enzyme is denatured;
 protein in nature;
 comparison of amount of product in **A** and **C**;
 comment on relative denaturation in **A**; 5 max
- (d) **A** : less product formed;
B : same result; 2
- (e) pH, substrate, temperature (2 of 3); 2
- (f) control of the variable missing in (e);
 use of replicates;
 stagger mixing times;
 perform simultaneous titrations;
 add inhibitor (boil immediately) to stop enzyme action; 3 max

[Total: 18]

- 2 (a) drawing: accurate number of bundles (between 12 and 18);
 different sizes shown;
 shown alternately – minimum 4 bundles;
 largest bundles have an elliptical shape;
 positions of both on arc; 5
- (b) (i) accurate position of line on a radius, min. radial line across
 whole length of bundle;
 (if a tangential line is drawn – be critical in its acceptance) 1
- (ii) xylem / phloem in a bundle provided correct line above; 1

[Total: 7]