UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE O Level

MARK SCHEME for the November 2005 question paper

5090 BIOLOGY

5090/03 Paper 3 maximum raw mark 40

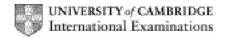
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1 (a) Drawing marks:

[D.3]

- 1 Clear, clean realistic drawing, 5 cm or more, with basal disc.
- 2 Fleshy scale leaves accurately shown and attached.
- 3 Papery covering scales shown

Labels: Any 2 of: leaf/scale/bud/stem/disc;

[for 1]

(b) (i) Up to three from:

both are roots; transverse sections; central conducting tissue; surrounded by storage tissue; AVP;

[up to 3]

(ii) Expect a comparison/contrast to be made

[1 mark per line]

specimen in Fig.1.1 cellular structure clear vegetative organ AW cells almost empty cut surface of W2; no cells visible; storage tissue/organ;

full of starch/stored food;

[up to 2]

(c) (i) black due to starch;

central pattern;

detail of distribution;

ref. time, or development of reaction;

[up to 3]

(ii) Test: Heat/boil with Benedict's; how heated;

obs: orange/reddish (ppt); A: green if ref dilute concn.

concl: ref. (amount of) R.S/glucose present;

[4]

(iii) cutting open cells;

increased surface area;

releasing contents/sugar;

decanting gets rid of (masking) colour AW;

[up to 2]

[Total:18]

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2 (a) (i) Drawing marks;

[D.2]

- 1 Ruled rectangle and square, in proportion.
- 2 Specimen well placed.

Labels: slide, cover glass, specimen, water;

[2]

[3 correct = 2 marks 2 correct = 1 mark]

(ii) Two from:

air bubbles avoided; central placement; no overflow of water;

[2]

(b) Filter paper soaks up water; stain penetrates/drawn under cover; stain emerges on f paper/replaces water; specimen becomes stained; ref. development with time;

[up to 4]

(c) (i) Drawing marks:

[D.3]

- 1 At least 6 cm clear and clean.
- 2 Large and small/simple leaves observed.
- 3 Leaf arrangement accurately shown.

Labels: stem; leaves;

[2]

 (ii) Line ruled and accurately measured with units once; expression line length over specimen size; correctly calculated and recorded;

[3]

(iii) Four from:

specimen supported; for examination with microscope; clear for viewing/no fingers in the way AW; specimen flat/thin; ref. ease of focusing;

AVP; [such as ref. penetration of light/ref. visibility of staining]

[4]

[Total: 22]