

**MARK SCHEME for the October/November 2011 question paper  
for the guidance of teachers**

**5038 AGRICULTURE**

**5038/31**

Paper 3 (Practical), maximum raw mark 30

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

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Cambridge is publishing the mark schemes for the October/November 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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|--------|-------------------------------------|----------|-------|
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- 1 (a) (i) **AS1** Label for any two parts correctly labelled root hair and leaf.  
One mark for each (max 2)  
Quality of drawing (up to 2) [4]
- (ii) **AS2** Label for root hair and leaf. (1)  
Rhizome labelled or any correct part (1)  
Quality of drawing (up to 2) [4]
- (b) (i) **AS1** Hairy leaves waxy cuticle (1)  
Rosette leaves, low to ground. (1)
- (ii) **AS2** Able to shoot / grow from rhizome if broken (1)  
Spreads underground (1) [4]
- [Total: 12]**
- 2 (a) (i) **AS3** blue / no change no glucose  
**AS4** brick red or glucose  
green yellow  
Both boxes complete for mark [2]
- (ii) **AS3** blue black starch  
**AS4** blue black starch  
Both boxes complete for mark [2]
- (iii) **AS3** blue no protein  
**AS4** purple protein  
Both boxes complete for mark [2]
- (b) **AS4** all nutrient present and protein for growth. [2]
- [Total: 8]**
- 3 (a) **AS5** 18gms 10%  
**AS6** 15gms 25% [4]  
(Working not essential)
- (b) (i) neutral / not alter results [1]
- (ii) blue/green red  
8.0 4.0 [4]
- (c) add lime / chalk / any suitable method [1]
- [Total: 10]**