

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the November 2005 question paper

0600 AGRICULTURE

0600/03 Paper 3

Maximum mark 80

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initially instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

The minimum marks in these components needed for various grades were previously published with these mark schemes, but are now instead included in the *Report on the Examination* for this session.

- CIE will not enter into discussion or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the November 2005 question papers for most IGCSE and GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



Page 1	Mark Scheme	Syllabus	Paper
	IGCSE – NOVEMBER 2005	0600	3

1	(a) (i)	2004;	[1]
	(ii)	6 correct plots;;; 5 correct plots;; 3 or 4 correct plots; less than 3 correct plots = 0	[3]
	(b) (i)	disturb surface of soil/do not expose lower moist soil layers; (1) for a named purpose e.g. removal of weeds; (1)	[2]
	(ii)	mulching/other suitable method;	[1]
	(c)	filtering; to remove larger objects/named objects; settling; to remove smaller suspended particles/named particles; chlorination/process to remove micro-organisms;	[max 4]
	(d) (i)	rocks pushed together by current;	[1]
	(ii)	dissolve some minerals in rocks; react with carbon dioxide/SO ₂ /pollutants to form acid rain;	[2]
			TOTAL 14
2	(a) (i)	65% - 70%	[1]
	(ii)	range 6.2 to 6.5;	[1]
	(iii)	minerals/calcium leaching in soil; replaced by hydrogen ions/minerals less available to plants; aluminium/toxic ions released into soil;	[max 2]
	(iv)	liming; prevent over-watering;	[2]
	(v)	leaching of calcium ions;	[1]
			TOTAL 7
3	(a) (i)	W = epidermis; Y = stoma/stomata/pore;	[2]
	(ii)	contain chlorophyll/chloroplasts; combine carbon dioxide; and water; in the presence of light; to produce glucose/carbohydrate; and oxygen;	[max 4]
	(b)	pesticide is soluble; absorbed through stoma; passes into phloem; translocation;	[4]
			TOTAL 10

Page 2	Mark Scheme	Syllabus	Paper
	IGCSE – NOVEMBER 2005	0600	3

- 4 (a) (i)** removal of trees/burning;
stumping;
ploughing; **[max 2]**
- (ii)** soil removal;
because lack of tree roots mean soil particles are not bound together A/W;
loss of habitat for wildlife;
reference to reduced PS/greenhouse effect;
drier climate; **[max 3]**
- (b)** name of crop = 0
soil preparation method – tilth/fine/level/ridges/rounds;
sowing or planting method – e.g. by hand/seed drill/use of sand;
fertiliser requirements – material and dressing method;
weed control – named suitable method;
harvesting method – appropriate to crop/appropriate tool;
detail mark for appropriate detail of one of above e.g. quantity of fertiliser; **[max 5]**
- (c)** e.g. drought resistant;
resistant to named disease;
reference to size of seed; **[max 2]**
- TOTAL 12**
- 5 (a) (i)** boring pest/nematode/eelworm; **[1]**
- (ii)** crop rotation;
digging in organic material;
not transferring soil/plant materials between fields; **[max 2]**
- (b)** named crop/names viral disease e.g. mosaic virus = 0
- (i)** e.g. appropriate vector e.g. tools/insect as appropriate; **[1]**
- (ii)** e.g. different colour patches on leaf/fruit as appropriate; **[1]**
- (iii)** e.g. burning diseased crop/cover to prevent insect vector; **[1]**
- (c) (i)** poison water supply/inhalation; **[1]**
- (ii)** reference to non-selective effect on other organisms/run-off into water supply/
build up in food chain; **[1]**
- (iii)** name = 0
reference to more effective than other methods; **[1]**
- TOTAL 9**
- 6 (a) (i)** bigger birds; **[1]**
- (ii)** calcium needed for egg shell production; **[1]**
- (b)** reference to age;
reference to production;
reference to illness; **[3]**

Page 3	Mark Scheme	Syllabus	Paper
	IGCSE – NOVEMBER 2005	0600	3

- (c) further named example;
serious disease;
inform veterinary services/government;
contagious/reference to danger;
quarantine/import/export ban; [max 3]
- TOTAL 8**
- 7 (a) 4 correct gametes;
correct cross/table;
BB, Bb, Bb, bb/3 black: 1 white ration in f1; [3]
- (b) name of livestock = 0
two parents with desired characteristic high yield;
mated;
cross offspring with desired characteristic/high yield;
repeat;
over several generations; [max 3]
- (c) e.g. young born/weaned at time of most food/least pests etc;
so young grow fastest;
therefore mating date must be determined; [max 2]
- TOTAL 8**
- 8 (a) cutting;
longevity/cost;
check circuit; [3]
- (b) topography;
distance from farm;
road access/reference to transport, but not reference to market;
wind direction/small/noise;
access to water;
reference to security; [max 5]
- TOTAL 8**
- 9 sum of costs;
sum of sales/returns;
clear layout;
method of calculating profit/subtraction;
\$154; [max 4]
- TOTAL 4**