

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

MARK SCHEME for the October/November 2006 question paper

0600 AGRICULTURE

0600/02

Paper 2 (Extended Theory), maximum raw 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 instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

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 grade thresholds for various grades are published in the report on the examination for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses.

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

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Question Number

Mark Scheme Details

1	(a)	(i)	settled arable; R – subsistence farming/communal/commercial		
		(ii)	communal – adv. free land; many workers; many skills dis. decision making difficult; disputes over land; open to others poor management e.g. disease/quality of care;		
			rented – adv. no initial capital; independent decisions; work for own gain; dis. rent needed; if family fails no back up;		[3]
	(b)	(i)	no chemical pesticides/herbicides; use only natural fertiliser; obey rules/requirements in place that denote organic;	any 2	[2]
		(ii)	farmer – better price/less costs environment – less pollution/supports recycling; R – no pollution		[2]
				[total 8 marks]	
2	(a)		sand – larger/has large surface; inert/less fertile;	cf clay – smaller; holds chemicals/more fertile; (all sides correct)	[2]
	(b)	(i)	line on clay higher;		[1]
		(ii)	clay – small spaces for water to rise in/capillary action greater; or sand – water cannot rise high in large spaces		[1]
	(c)	(i)	line below top soil, either above or below the darkest layer and line below sub soil; the bottom of the lightest layer;		
			correct line placement; top soil; subsoil; bedrock/parent rock		[4]
		(ii)	mix with distilled water; add barium sulphate; shake well and leave to settle; use universal indicator/litmus paper; compare colour of solution with chart	any 3	[3]
		(iii)	X higher pH/less acidic because Y has humus; which is acidic; bedrock is alkaline; example chalk;	any 2	
			or X lower pH/more acidic because of leaching/drainage of nutrients/acids from Y bedrock is acidic; example peat;	any 2	[2]
			marks only given for reasons		[2]
					[total 13 marks]

Page 3	Mark Scheme	Syllabus Paper
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Question Number	Mark Scheme Details		Marks	
3	(a) (i)	A stigma; B ovary		
	(ii)	insect carries pollen to stigma A self pollination	[1]	
	(b)	gametes/male and female nuclei; fuse/join;	[2]	
	(c) (i)	palisade layer;	[1]	
	(ii)	temperature/light intensity/CO ₂ concentration/water concentration	any 2 [2]	
	(iii)	dissolved in water/in solution; carried in phloem; carried as sucrose/sugar translocation; high to low conc./mass flow;	max 3 [3] [total 11 marks]	
4	(a) 1	nitrates not so available in fresh material/fresh might 'burn' seedling roots; A reverse statement	[1]	
	2	room for roots to grow/allows air in/provides good drainage;	[1]	
	(b) (i)	named weed; use clean seed/early planting/mulching/rotation/inter-cropping/good crop cover/flooding (rice)	[2]	
	(ii)	<u>Crops</u> <u>Diseases</u> maize/millet/sorghum rust/mosaic/streak/tassel smut etc. rice blast/stunt etc. wheat stem rust/yellow rust etc.	[2] [1]	
		resistant plants/rotation/control vectors/spacing;	[1]	
	(c) (i)	E		
	(ii)	A		
	(iii)	new infestation occur/treatment kills predators/E attracts aphids	[1] [total 9 marks]	
	5	(a) (i)	non-ruminant, no rumen/only one stomach; R – non-ruminant only/chewing cud	[1]
		(ii)	bacteria break down cellulose/plant cell walls; water absorption	[1]
(b) (i)		groundnut cake; mangels/cassava/fodder beet; hay/dried grass;	[3]	
(ii)		higher protein; as in groundnut cake; or higher carbohydrate; as in cassava/fodder beet etc; R – general definition	[2] [total 7 marks]	

Page 4	Mark Scheme	Syllabus Paper
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Question Number	Mark Scheme Details	Part Mark
6	(a) isolates/contractions/water bag/head or feet first/detail for chosen animal;	any 3 [3]
	(b) (i) white;	[1]
	(ii) homozygous recessive; both needed for mark	[1]
	(c) select best/high yielding for use; over several years; resistance to diseases/drought	[2]
		[total 7 marks]
7	(a) suitable strength; e.g. strong poles/droppers/supporting posts suitable dimension; e.g. posts 4 m apart/50 cm deep/120 cm high (any one)	[2]
	(b) 1 increases pH which pasture plants like/favours micro organisms; 2 gives more space/lets light to pasture/less competition for nutrients and water if uprooted; 3 removes old growth/stimulates new growth/kills pests	[3]
	(c) pasture rested, allows for re-growth; prevents compaction, so no lack of air to roots; prevents overgrazing, so less erosion/weeds invasion; need explanation pasture 'cleaner' breaks cycle of animal pests; prevents selective grazing/species dominance; max 3	[3]
		[total 8 marks]
8	(a) (i) picks up dirt from roof; barrel open to organisms;	[2]
	(ii) insert tap on bottom quarter of barrel in diagram;	[1]
	(iii) use internal connector; fasten with clips; R – nuts	[2]
	(b) less wastage/loss by evaporation; does not cause soil erosion; direct to plant;	[2]
		[total 7 marks]
9	(a) feathers; eggs; fertilizer/quano;	any 2 [2]
	(b) (i) China;	[1]
	(ii) rest of Asia down 6%/none in S America/Africa halves;	[1]
	(iii) higher price; because 50 % less duck; Allow 1 mark for idea of supply and demand	[2]
	(c) (i) runny eyes/sneezing/white or green droppings/dull plumage/ruffled feathers/ stands alone or drooping stance;	any 2 [2]
	(ii) prevent spread of disease; allows for easier treatment;	[2]
		[total 10 marks]
		TOTAL 80