

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

MARK SCHEME for the October/November 2007 question paper

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| <p>0600/02</p> | <p>0600 AGRICULTURE Paper 2 (Core Theory), maximum raw mark 80</p> |
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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.

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.

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

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| Page 2 | Mark Scheme | Syllabus | Number |
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- 1 (a) moving to better pastures / areas when fertility of current homestead declines; R move to new area without qualification
- (b) (i) transport/moving loads/pulling ploughs; [1]
- (ii) windbreak/shade/firewood/green mulch; [1]
A increase soil nitrates
- (iii) variety of produce to counteract any one failure: one product helps another e.g. animals provide fertiliser; [2]
- (c) (i) goats; [1]
- (ii) use more fertiliser/grow higher yielding varieties/ improve pest-disease control; A intercropping any two [2]
- [Total: 8]**

- 2 (a) **N** ammonium nitrate/sulphate of ammonia/CAN; A urea
P bone meal/castor meal;
K wood ash/seaweed;
muriate of potash/sulphate of potash/potassium nitrate; [4]
- (b) chlorophyll; [1]
- (c) (i) to get random samples; OWTTE [1]
- (ii) distilled water is neutral/has no chemicals to affect result; [1]
- (iii) add universal/soil indicator; compare colour with chart; or introduce pH probe; read value off pH meter; [2]
- (iv) indicator colour blue green or higher value pH; R soil acidity reduced as answer must relate to test [1]
- [Total: 10]**

- 3 (a) (i) dry it; [1]
- (ii) 0.2; [1]
- (iii) humus/remains of living organisms; A stones [1]
- (iv) sandy/sandy loam; [1]
- (b) large particles/large air spaces/well drained/warms up quickly/ minerals low – leached/easily eroded; any two A feels gritty (in soil test) [2]
- (c) would reduce water loss/improve mineral content/ provide better structure OWTTE; any two [2]
- [Total: 8]**

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| Page 3 | Mark Scheme | Syllabus |
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- 4 (a) (i) hard grain/appropriate colour for crop; R plant wither
- (ii) dry/good air flow;
- (b) (i) prevent rats/vermin climbing up; [1]
- (ii) harbours pests/not durable/catch fire; [1]
- (iii) soaked in preservative i.e. creosote or oil/set in concrete: A paint [1]
- (c) (i) use of natural predator/parasite; A correct example, ladybirds to eat aphid [1]
- (ii) host plants change so pests don't establish, life cycle is broken; [1]
- (iii) chemical spray is most effective; biological only controls aphids; OVP [2]

[Total: 9]

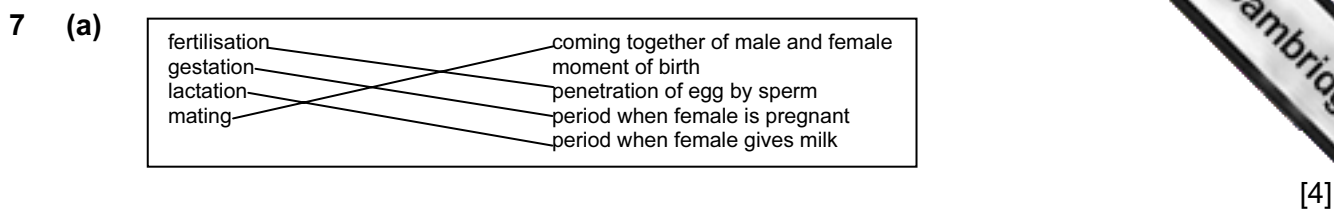
- 5 (a) osmosis; [1]
- (b) (i) go down; [1]
- (ii) to prevent water loss by evaporation; [1]
- (iii) increase (transpiration); because diffusion gradient is set up as air is removed from leaf surface OWTTE; [2]
- (c) (i) lack of water/water intake less than water loss: A excess transpiration R high temperature/high wind [1]
- (ii) provide irrigation/named method of watering ; create a wind break; [2]

[Total: 8]

- 6 (a) gullet/oesophagus; [1]
- (b) break it up/add saliva – enzymes/ease of swallowing/aid digestion; R ref. to taste [2]
- (c) increased amount of food; high protein/example of such a food stuff; high carbohydrate/example of such a food stuff; high energy food/example concentrates, [3]
- (d) (i) centre/just behind centre; A half a wheel behind [1]
- (ii) hooks/cleats on cart sides; [1]
- (iii) A as it is a quick release knot; [1]

[Total: 9]

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| Page 4 | Mark Scheme | Syllabus |
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(b) (i) recessive, because all first generation lack horns/horns reappear in second generation; ms; [1]

(ii) carried in gametes;
as DNA/genes;
on chromosomes; [3]

(c) (i) lack of food/disease/difference in genetic make up; R one grew better [2]

(ii) pedigree of the ram;
qualities of the ram, his parents or progeny such as growth rate/conformation/food conversion; [2]

[Total: 12]

8 (a) (i) insect, because large petals; A bird [1]
A self pollination if correctly observed
i.e. parts enclosed and close together

(ii) tubers become separated; A new plants from runners
tubers grow into new plants;
plants identical; any two [2]

(b) (i) more light so more food/less damage from ground pests; [1]

(ii) not every variety was tested in both conditions; OWTTE [1]

(c) (i) nitrogen used to make protein/chlorophyll; [1]

(ii) diminishing returns;
more fertiliser added does not result in higher yield; [2]

[Total: 8]

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- 9 (a) (i) no protection for skin contact/no gloves or protective clothes;
no protection for eyes/no goggles;
can inhale through nose/no mask; any two
- (ii) do not wash out in stream/wash hands before doing anything else; [1]
- (b) more air circulates so;
roots can respire better; R so grow better
roots are warmer for chemical reactions; A plants do not rot/drown
nutrients can be absorbed better; any two [2]
- (c) (i) the correct stocking rate for an area/
area of land to support one LSU without long term damage to the area; [1]
- (ii) overstocked – stocking rate is 5 LSU per hectare;
but the carrying capacity is 0.08 LSU per hectare;
no mark for overstocked marks given for correct reasons [2]

[Total: 8]