

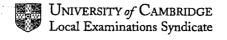
NOVEMBER 2002

INTERNATIONAL GCSE

MARKSCHENE

MAXIMUM MARK: 60

SYLLABUS/COMPONENT: 0600/3
AGRICULTURE
(EXTENDED)



| Page 1 | Mark Scheme | Syllabus | Paper | |
|--------|------------------------------------|----------|-------|--|
| | IGCSE Examinations – November 2002 | 0600 | 3 | |

| 1 | (a) | (i) (ii) (iii) (iv) (v) | 1600 kg/ha; chemical fertiliser; yellow; stunted/yellow; nodules; containing microorganisms (bacteria) turn nitrogen; into protein; decomposition of legume plant (protein) releases ammonia; | | 1 1 1 1 |
|---|-----|-------------------------------------|---|-----|------------------|
| | | ٠ | (turned into) nitrates (accessible to plants) | max | 4 |
| | (b) | (i) | cheaper; available; easy to apply (does not need experience organic; | | |
| • | | | improves soil structure; | max | 2 |
| | | (ii) | smell / storage problems/consistency / weeds | | 1 [11] |
| 2 | (a) | A = any B = any | opriate labels y cell with chloroplasts; y white space between cell inside leaf; ly cell with bold outline in upper part of vascular bundle; | | 3 |
| | (b) | (i) | carbon dioxide and water <u>sunlight</u> glucose and oxygen chlorophyll | | 2 |
| | | (ii) | collect / absorb light; | | 1 |
| | (c) | soluble from (e to (e.g. | nent of carbohydrate / sugar / sucrose; e.g. leaf, food store in root); growing point / food store in root); ubes / phloem; | | 2 |
| | (d) | | nergy / respiration; | max | 3 |
| | (~) | for grov | wth / repair; ed / fruit) production; | max | 2 |
| | | 101 (300 | out many productions, | Шах | |
| | | | | | [11] |

| Page 2 | Mark Scheme | Syllabus | Paper |
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| 3 | (a) | single parent; no fusion; no fertilization; genetically identical; ref. mitosis; | max | 2 |
|---|-----|--|-----|-----|
| | (b) | adds up costs; supply / demand; quality by-products; ref. to yield; (e.g. quantity) | | 3 |
| | (c) | price; competition; population of consumers; similar products / supply quality / taste / consumer preference | max | 3 |
| | | income level | | [8] |
| | | | | |

Total for section A 30

| | ı | | |
|--|---|---|--|
| | ĺ | 1 | |
| | | | |

| (a) NAMED DISEASE eg. Newcastle | eg. Coccidiosis | 0 |
|--|--|-------|
| drop in egg production; mis-shapen eggs/ soft shelled; paralysis/ twisted neck; gasping; mucus discharge from nostrils; yellow; evil smelling diarrhoea; | diarrhoea; with blood stains; listless; ruffled feathers; pale comb; death; loss of appetite; | max 5 |
| (b) cleaning x3;;; isolate new stock; isolate sick animals; ventilation; vaccines; sterilise offal; report to the Vet | cleaning x3;;; isolate new stock; isolate sick animals; coccidiostats; sulphur-drugs; method of applying; report to the Vet or Extension officer | max 7 |

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service provided eg Al; quarantine; parturation; dystokia; disease outbreak (c) service provided eg Vaccination / medicines; advice/information: location / distance: 3 [15] quality of diagram;; 5 (a) (if answer without diagram, marks for linkage between components to show relative positions) 2 cloud; precipitation; run-off; infiltration: water table: river; lake/sea: evaporation; drinking / urine; transpiration / water absorption max 8 increased transpiration; (b) (i) pollination; seed dispersal; evaporation of water from soil surface / irrigation systems; physical damage; removal of top soil (nutrients) leading to poor growth 3 max (ii) reduce photosynthesis; reduce transpiration; slower respiration / chemical processes in plant; 2 slow germination / slower growth; reduce evaporation max [15] 2 quality of diagram;; 6 (a) gullet / oesophagus stomach; pancreas; gall bladder; sphincter; duodenum; ileum (small intestines) colon; rectum (large intestines) appendix; anus; max 7

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(b) (enzymes) break down;

large insoluble molecules; (food)

into small soluble;

e.g. of enzyme and substrate (e.g. amylase and starch);

(micro-orgs)

break down cellulose;

because mammal cannot / A W; into simple sugar (substances)

for absorption:

max

[15]

6

7 (a) chromosome-

hereditary material A/W;

found in nucleus;

DNA:

genotype

the genetic make-up of an organism /

the genes an organism has; the alieles (of a gene) present;

may be homozygous or heterozygous;

e.g. (could be AA, Aa or aa);

max 4

(b) quality parent 1;

(crossed with) quality parent 2;

select best of F1 generation;

cross F1 with F1 / A W;

select, best offspring / depending on phenotype of offspring;

repeat for many generations / A W;

max 4

(c) Appropriate symbols chosen (same letter, capital for dominant, small for recessive);

Parents correctly represented as homozygous, and crossed (e.g. AA X aa);

Gametes correctly represented (A and a);

FI generation heterozygous (Aa);

Cross / self, F1 generation (Aa x Aa);

Gametes correctly represented (A a and A a);

Punnet square used / lines accurately drawn to show fertilisation of all possible combinations of gametes from both FI parents;

F2 generation 1 homozygous dominant / AA;

2 heterozygous / Aa;

1 recessive homozygous / aa;

AA and Aa both have dominant phenotype;

7

[15]