UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS GCE Ordinary Level

MARK SCHEME for the May/June 2010 question paper for the guidance of teachers

5014 ENVIRONMENTAL MANAGEMENT

5014/21

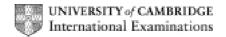
Paper 21, maximum raw mark 60

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.

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

CIE is publishing the mark schemes for the May/June 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



| | Pa | age 2 | | Mark Scheme: Teachers' version | Syllabus | Paper | | | | |
|---|-----|---|--|---|--------------------|-------------------------|--|--|--|--|
| | | | · · · · · | GCE O LEVEL – May/June 2010 | 5014 | 21 | | | | |
| 1 | (a) | son exp | are products for [2] | | | | | | | |
| | (b) | country gains foreign exchange/revenue/eq; can be used to pay for imports; sensible reference to balance of payments/contronational budget/debt/company profits; helps government spending on infrastructure maintains/ creates jobs; | | | | | | | | |
| | (c) | (i) | (i) 20 plants on each row (+/-1); even spacing; | | | | | | | |
| | | (ii) | orier | [4] | | | | | | |
| | | (iii) | allov | [1] | | | | | | |
| | | (iv) | profitable; more [2] | | | | | | | |
| | (d) | (i) | (i) as planting density increases reduction of soil erosion increases/eq; not n soil erosion between 60–80 planting density/eq; | | | | | | | |
| | | (ii) | (ii) 50 or 60 max yield (per Ha)/profit compared to planting costs; nutrients retayields/eq; | | | | | | | |
| | | (iii) | remo | oval of topsoil/eq; | | [1] | | | | |
| | | (iv) | iv) removal of plant cover; overcropping; loss of root binding; reference interception/described; infiltration/soil saturation; removal of topsoil/fertile run-off; erosion by water; wind; reference to flooding; | | | | | | | |
| | (e) | (i) | • | two densities sampled; two pineapples not represe sured; | ntative/eq; only d | ameter [2] | | | | |
| | | (ii) | | able table, rows/columns for 25 items of data; den dings; | sities/field numbe | er; and diameter [3] | | | | |
| | | (iii) | | e measurements for each pineapple to see change eral densities sampled to see pattern/could be prese | | pe of growth/eq; [2] | | | | |
| 2 | (a) | (i) | 4000 | D;; | | [2] | | | | |
| | | (ii) so government could gain more revenue form HEP/eq; people would not objective; | | | | | | | | |
| | (b) | generate <u>more</u> power/electricity; unlikely to dry out/eq; allow one of – does not release carbon dioxide/so does not contribute to greenhouse effect/ low running costs/renewable | | | | | | | | |

[2]

source of energy;

| Page 3 | | | | Mark Scheme: Teachers' versio | Syllabus | Paper | | | | |
|--------|-----------|--|---|---|---|-----------------|-----|--|--|--|
| | | | | GCE O LEVEL – May/June 2010 | | 5014 | 21 | | | |
| (0 | ;) s | o n | numbers of people fishing can be known/controlled; to prevent overfishing/eq; [2] | | | | | | | |
| (0 | d) (| | | averages similar; for nitrate; and phos age (0.2 difference); reference to figures; | esphate; idea that most readings close to s; [3] | | | | | |
| | (i | • | Sample point 1: nitrate/55; much higher than the others; a measuring error occurred; ignore this reading as it's the only one not in close agreement/eq; | | | | | | | |
| | (ii | (iii) to make it more reliable; | | | | | | | | |
| (€ | • | _ | gal bloom; blocks out light so plants die; bacteria multiply; use up oxygen; fish ference to eutrophication; | | | | | | | |
| (f |) (| overall bromacil passes through soil to water; 50 m in 60 days; breaks down in a after 180 days/eq; enters the water; from both fields; reference to figures to absence; | | | | | | | | |
| | (i | ii) | P – \$ | S cross <i>and</i> T tick; | | | [1] | | | |
| | (i | • | • | n with a larger soil barrier) bromacil ei age bromacil might do to water; not worth | parrier) bromacil entered the water/lake; do not know what to water; not worth taking the risk; [2] | | | | | |
| 3 (a | ı) (| (i) | adva | ntage must be a statement amplified in ca | andidate's | s own words; | [1] | | | |
| | (ii) disa | | disa | dvantage must be a statement amplified in | n candida | te's own words; | [1] | | | |
| | (ii | ii) | disa | dvantage must be a statement amplified in | n candida | te's own words; | [1] | | | |
| (k | o) (| (i) | non | oolluting/oxygen not a greenhouse gas/ed | q/uses rer | newable energy; | [1] | | | |
| | (i | | in favour. could develop aluminium processing industries to create jobs; smelter of jobs; raises standard of living; not polluting; transport by sea uses less fuel; may be to use own bauxite later if price rises; AVP; | | | | | | | |
| | | | muc | nst: too much electricity used so not end n money/company will make most mor ral years/other things to spend money on | ney; cour | _ | • | | | |
| | | | MAX | 4 for an argument only in favour or again | ıst | | [5] | | | |